THE OHIO

MEDICAL AND SURGICAL JOURNAL.

Vol. II. Columbus, November 1, 1858. No. 2.

PART FIRST.

ORIGINAL COMMUNICATIONS.

Removal of a Knife from the left Pleural Cavity, by the exsection of a portion of the sixth rib, and the introduction of the hand. By J. W. HAMILTON, M. D., Professor of Surgery in Starling Medical College, Physician and Surgeon to the Ohio Penitentiary, &c.

McGinnis, a convict in the Ohio Penitentiary, sentenced by the Hamilton Common Pleas for the term of five years, for manslaughter, was admitted June, '58. From the time of his admission he had a nervous hurriedness about his breathing, and an anxious, forlorn expression of countenance. He was the victim of most persistent melancholia, with occasional delusions. The attention of my assistants was directed to him as a man whose state of mind might at any time lead him to the commission of some desperate act.

On the morning of September 14, at 2 o'clock, I left my residence to attend to a professional call at a distance. On returning at 5½ A. M., I learned that a suicide had been attempted at the Penitentiary, and that a messenger had called for me soon after my leaving. I arrived at the hospital at 6 o'clock. Found the man McGinnis with the right side of his head and face horribly contused, swelled and discolored, the skull being laid bare over the anterior part of the temporal suture, to the extent of the surface of a silver dollar. Three and a half inches above the sternum was an irregular crucial incision. From this a very tortuous wound passed first

outwards, then obliquely downwards and outwards, and finally perpendicularly downwards, so as to perforate the pleural cavity, which the finger could be made, with perfect facility, to enter. On introducing an ordinary steel sound, its own weight was sufficient to carry it to a depth equal to ⅔ of its length. The examinations were of course made with due guardedness in reference to the admission of air, and the induction of inflammation. They gave no clue as to the presence or absence of a foreign body.

Abundant resonance was elicited on percussing the left thorax. The respirations were accelerated. There was an absence of the vesicular murmur on the left, with puerile respiration on the right side.

I gathered from various sources the following history: At about three o'clock the attention of the hall officer was attracted to the cell of McGinnis by a noise which, on approaching it, he found to be produced by frequent bumps of his head against the stone wall. On entering it, he was found in the condition above described. Only a few ounces of blood had escaped, and this was mainly from the wound in the temporal region. He was at once carried to the Hospital. One of his first remarks on seeing the attendants was, that he had "swallowed a knife," and wished to know if it could be extracted. His pulse at this time, although he was much excited, was less than 100 per minute. Left hospital, giving directions for a minute search in bed, cell, hall, &c., for knife.

Returned at 9 A. M., with Drs. Eels and Drury. Officer had instituted the most thorough search for the missing implement, without finding it. McGinnis now varied his statement, denying that he had "swallowed" it, and saying that he had stuck it in a crevice in his cell. Another fruitless search was made, on returning from which we had a revamping of the whole affair. He now said that he threw it through his latticed cell door into the general hall. Through this hall hundreds of men had passed, and it had been swept, all without giving the least clue to the missing implement.

Various efforts were made to get some idea of the kind of weapon from the patient himself. Many kinds of knives were brought before him, and he interrogated as to the resemblance. He simply indicated, by shaking his head, that it was not like any of them. To add to our embarrassment, he remarked once or twice that he did not know where it was.

The view which I took of the case at this stage was as follows:

That if any of his statements were to be regarded, it was the first: not that he had swallowed the knife, but that it had passed down through the opening into the thorax. This view I rested upon the fact that it was his first statement of the case, and that he manifested no disposition to modify it until he evidently inferred that we were disposed to predicate operative procedures upon it. Besides, on this supposition only, could we come to any rational conclusion as to its whereabouts. Furthermore, we could get no trace whatever of wound of lung, empyema, or hæmato-thorax. Hence I supposed that it was quite certain, not only that it had entered the thorax, but that it had done so in such manner as to induce collapse of the lung, without either wound or hemmorrhage, that accordingly it must lie loose in the pleural cavity. Supposing furthermore that the knife, of whatever pattern, had a point and edge, it must inevitably produce a fatal result within a short time.

Accordingly, as the original wound would not admit of enlargement, and was so tortuous as to forbid the use of instruments, it was proposed to undertake its removal by carrying the hand into the thorax, but as one of the medical gentlemen, who was experienced in the tricks of the insane, still thought it probable that it had been disposed of in some other way, it was postponed, to give further opportunities for investigation.

3 o'clock, P. M. Saw the patient, in connection with Drs. Sacsche, J. B. Thompson, and Drury. Nothing new elicited in regard to the foreign body. These gentlemen concurred in the propriety of an operation, but it was reluctantly deferred for the purpose of quieting the patient by the use of venesection and opium. Pulse 138 per minute, respiration hurried, surface blue.

Sept. 15, 9 A. M. Present Drs. J. B. Thompson, Sacsche, Gay, Mœller, Patterson, and Drury. Pulse 155, feeble, irregular; sufferign extreme. Gave at once Brandy ℥iii. and Laudanum ℥i. in hot tea. In this desperate extremity an operation was undertaken at 10½ o'clock, every gentleman present heartily concuring.

Chloroform being given, and the room at a temperature of 75°, a flap was made dissecting down and reflecting back everything external to the ribs, so as to expose the sixth and seventh for about five inches. The anterior termination of the point of exposure was just at the junction of these ribs with their cartilages. On reaching the rib it was my intention to divide its periosteum by cutting down firmly upon the bone and making the attempt, after the manner of

Maissoineuve's operation on the lower jaw, to reflect the periosteum and pleura from it without dividing the latter. The outer surface was cleared without difficulty, but as I was effecting the separation along the attachment of the internal intercostal muscle, a laceration of the pleura occurred, upon which I abandoned this part of my plan, and proceeded at once to divide the rib by inserting one blade of the common bone pliars in the sixth intercostal space and cutting the sixth rib. A similar operation further back removed a piece of appropriate length. This done, and my left hand dipped in water of elevated temperature, it was inserted into the opening and carried forward towards the sternum till the ends of the fingers reached the mediastinum and hurriedly explored the anterior aspect of the root of the lung. Getting no trace of the object of my search, the hand was dropped to the diaphragm, which being hurriedly explored without success, it was thrown upon the posterior aspect of the root of the lung, where almost the first object I touched was the knife, lying beside the spine in an antero-posterior direction. It was at once withdrawn and the wound closed with nine stitches, adhesive plaster, a large compress of lint, and a bandage. Jugs containing hot water were freely used about the extremities; brandy and laudanum with hot drinks were administered, and the room kept at a rather high temperature.

P. M., 2½ o'clock. Pulse 142, regular; patient more comfortable. Ordered beef tea, opium, brandy, &c.

7 o'clock, P. M. Pulse 138, regular, full. Patient quite comfortable. Continued last prescription.

Sept. 16, 8 o'clock, A. M. Learned that through the entire night the patient manifested a most desperate determination to thwart all our efforts in his behalf. Kicked the iron footboard of his bed all night, refused to swallow either drinks or medicines, and resisted to the utmost the forcible attempts of the attendants. Respiration, 22 per minute; pulse 140, feeble, irregular; extremities cold. Introduced a quantity of beef tea, &c., through nostril, after making a most unsatisfactory attempt to force his mouth open with the end of a long flat file. Died at 12 o'clock, M.

Autopsy, five hours after death. Wound on the side perfectly dry, there not being the slightest sign of the entrance of air or the escape of fluids. The dura mater opposite to the left temporal region was found red and thickened to several times its ordinary character, in a circle two-thirds of an inch in diameter. It was highly organ-

ized, and was supposed to have been of some months standing. With this exception the meninges and brain were healthy, except at the base, where numerous coagula were found within the dura mater. The skull was not fractured.

Wound in Neck.—In a strait position of the head and neck, this was three and a half inches above the sternum in the median line. It was an inch and a half long perpendicularly, and three-fourths of an inch long horizontally, extending farthest from the median line on the left side. It presented no sign of healing. It passed through skin and superficial fascia, then passed outwards under the sterno-cleido-mastoid, the sterno-hyoid and sterno-thyroid, thus reaching the sheath of the great cervical vessels and nerve. Perforating this, it passed perpendicularly downwards, between the carotid artery and jugular vein without wounding either. Passing anterior to the subclavian artery, it perforated the pleura in close connection with the pneumogastric nerve.

Thoracic Cavity.—Here we found pretty extensive signs of inflammation. Abundant tender shreds of lymph overspread both costal and pulmonary pleura. The pleural cavity contained a few ounces of serum, deeply colored with blood. The lung was collapsed so as to occupy about half its cavity. The anterior portion of its parenchyma presented but very slight traces of inflammation. The posterior and superior portion, including most of the upper, with a small part of the lower lobe, was suffused with bloody lymph, sufficiently to produce slight solidification. All this part of the lung was deeply discolored. The right lung was perfectly healthy.

The broad extremity of the knife, as shown by the examination had rested upon and lacerated the pleura covering the sixth rib, near its neck, while the smaller extremity was separated from the pericardium by the reflection of the pleura entering into the constitution of the root of the lung. Both these points were the seats of intense inflammation.

It will be observed that in our description of the operation, we make no allusion to the intercostal arteries. Those above were not touched, and hence require no further mention. Those associated with the divided sixth rib were cut by being pressed down upon the rib with the bone pliers, and thus separated ecraseur like. The result was, that we had no hemorrhage. The operation was planned with reference to its avoidance, it being deemed of the first impor-

tance to have the pleural cavity exposed for as brief a period as possible.

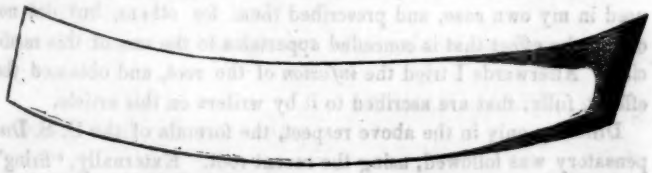
It would be difficult for one who has not carefully contemplated the subject to imagine the facility with which the exploratory part of the operation was effected. As soon as the rib was removed, the air entering the chest, the lung was compressed into a rounded mass, of considerable density, leaving a clear space all around the ribs and over the diaphragm. As the tips of the fingers explored the anterior aspect of the root of the lung, the heart, apparently thrown anterior to the mass of compressed lung, played distinctly and vigorously on the palm of the hand,—perhaps *the first time the living, pulsating, human heart was ever grasped by the human hand.*

We are far from supposing that the state of the chest was the sole cause of death. Had there been co-operation on the part of the patient, and no complication, we were not able to see why the patient might not have lived much longer or even recovered. In fact the coagula at the base of the brain were in such abundance as would seem to be incompatible with life, although the attendant symptoms did not indicate this as the sole cause of death. Death at that particular time was evidently caused by the perversity of the patient. His condition was eminently such as to require quiet, opiates, stimulants and nourishment. After an excellent reaction had been secured by their use, a fatal prostration was induced by his exhausting persistent struggles and his determined rejection of the only means by which it could be averted.

My assistant in the hospital, a man of genius and a most faithful fellow, prepared the following wood cuts. With the assistance of a fellow prisoner of equal ingenuity, he first of all, with very poor facilities constructed a few rude instruments with which he made this, his second attempt, at wood engraving. A little attention to them will make plain much that may seem obscure in the foregoing.

In this cut the situation and character of the wound on the neck is shown, as also the wound in the temporal region, and the swelled and di-colored condition of the side of the head and face.

The above represents the direction, situation and character of the incision and flap by which the rib was exposed, the position in which the arm was held, &c.



This represents the piece of rib removed, full size. It is 3⅝ inches in length. The opening was amply sufficient for a large hand.

The last cut represents the knife, shortened ¼ inch. It is a sorry thing for an implement of death. The slender end was intended evidently to be driven into a piece of wood for a handle. It is 4 inches in length and is almost without point or edge. The back is of considerable thickness. This knife of itself affords abundant ground of supicion in regard to the patient's mental condition. The broad end having been made to perforate the pleura, and air once admitted into the pleural cavity, it is very easy to see that it is well adapted to falling into the cavity.

Addendum to Gilpin's case of Nervous Disease.

Messrs Editors :—As some who read my report in your Sept. issue may be interested in learning the sequel of the case, I will briefly say that, after wearing the seton for three months, it was taken out, and the tonic and alterative course that had been persistently tried for the same length of time, was also abandoned.

The metallic taste from the strychnine had come to be much the same as when I was salivated by arsenic.

From the date of my report, till the first of Sept., there was great tenderness of the sciatic nerve, as well as acute, pricking pain in the whole limb. Otherwise, my general health was fully established.

August 10th.—Actea Racemosa in maximum doses, three times daily. In this connection, I wish to ask if there is not a fault in the preparation of this article, as recommended in our works on Materia Medica ?

Decoction and tincture, are the modes spoken of by those who have written on the subject. Both of these preparations I have used in my own case, and prescribed them for others, but did not obtain the effect that is conceded appertains to the use of this medicine. Afterwards I tried the *infusion* of the root, and obtained the effects, fully, that are ascribed to it by writers on this article.

Differing only in the above respect, the formula of the U. S. Dispensatory was followed, using the recent root. Externally, "firing" the limb over the track of the nerve every alternate morning, as de-

scribed by Dr. Corrigan, in London Lancet, Dec. 5th, 1846, p. 612 or in Braithwaite, Part 13, Jan. to July, 1846, p. 55; also, Part 15, Jan. to July, 1847, p. 82. Any who are curious to see the instantaneous relief and asserted cures said to have been wrought by this novel mode of treatment, are requested to refer to the above named works.

The sensation of cold along the course of the affected nerve was so great that, the most apt illustration I can use, is, it seemed as if a *bar of cold iron* was laid directly on the part, producing that *aching pain* which we all have experienced in other parts of the body, from the same cause.

Warm baths were tried; but the heat that other parts of the body could tolerate was not sufficient to relieve the above described feeling in this limb.

Indeed, I had to abandon this mode of treatment, as it invariably made the limb more painful, and instead thereof use topical warmth. No application was so grateful to the limb as *boiling-hot camphor spirits*—especially over the course of the nerve, conjoined with brisk friction at the time. This plan is still followed every night, and then envelop the limb in flannel.

For the last few days the spastic contractions of the nerve have mostly subsided, with a decided abatement of the tenderness, and the prospects are hopeful that I shall ultimately regain my health.

Appetite is good; secretions and excretions natural and regular; and have regained my usual weight. Functional disturbance of the brain continues; muscae volitantes constant; sometimes quite impairing vision—being like a thick cloud of smoke.

Brilliant scintillations have been quite frequent ever since the crisis in my disease occurred. When reading or writing vision is, momentarily, wholly impaired by their resplendence. By day or by night, in sunlight or in darkness, the flashes of light are equally constant and dazzling.

I am now able to use the limb to some extent, without much increase of pain.

Spinal tenderness, though not wholly absent, is comparatively slight.

LEMAN GALPIN, M.D.

Milan, Ohio, Oct. 21st., 1858.

Poisoning by Strychnine.

Drs. Dawson and Hamilton.—As recoveries after having taken strychnine in poisonous doses have not been very frequent, and anything calculated to throw light upon the treatment of such cases interesting, I am induced to make the following report of a case which recently came under my care.

I was summoned in great haste to see a female, one square distant from my office, who was stated to be laboring under convulsions. Whilst passing up to the third story of the building, the lady of the house informed me that the patient was a stranger—had been in her house one week—came with a man who represented himself as her husband—that the man had left on the same day and not been heard of since—that she had informed the woman on that morning she could not keep her any longer—that after a short absence from the house, she had returned and was suddenly taken violently ill, and suggested the idea of her having taken something.

When I entered the room she was lying full length, prone, upon the floor; her breathing was hurried; pulse natural; intelligence perfect. Asked her what was the matter; her only reply to all my questions was, that she was dying, she knew she was. Smelt her breath; could perceive no odor upon it—had partially come to the conclusion she was shamming—when instantly she went into a most frightful convulsion; the head and neck bent backwards to the fullest extent—the arms and legs became rigid, the face livid, and the whole frame thrown into a quick, vibratile motion, resembling the action of galvanism. This spasmodic action lasted from ten to twenty seconds, when it gradually relaxed, and she could again converse as usual. The symptoms at once suggested the action of strychnine; and on being further interrogated, she admitted she had, about half an hour previously, taken some. Leaving for a few minutes, I went to my office and procured six 5 grain doses pulv. camphor, and as soon as I returned, gave her two of them at once, in a teaspoonful spirits of camphor. She at first refused taking it, saying she could not swallow, and that she did not wish to live anyhow, but afterwards got it down without much difficulty. She had another spasm during my absence, and three more after my return, one severe one which came on whilst removing her from the floor to the bed. Gave her 5 grs. pulv. camphor every 10 minutes, and administered chloroform in the mean time. In half an hour from the first dose the spasms ceased to return.

In endeavoring to elicit from her the quantity she had taken, and where she had procured it, we ascertained she had not taken the whole amount purchased, and on examination, found the remainder on the stand, done up and marked "strychnine poison." Anxious still to ascertain how much she had taken, I went to the drug-store at which she had obtained it, and upon showing it to the clerk, he recognized at once the parcel; said he had sold it to a woman that morning, giving her *three grains* by weight, telling her when doing so, there was enough to kill half a dozen men. Upon weighing the remaining portion on the same scales there was found to be exactly *two grains*. Subsequently to her recovery I learned from her that she had, upon returning to her room, opened the paper, and poured the poison on her tongue, washing it down with water; so there can be very little doubt as to her having swallowed one grain.

I have observed the operation of strychnine on animals, when given in various amounts, and am satisfied the symptoms could have originated from no other source; had she been perfectly acquainted with the pathogmetic effects of the drug, she could not, nor could any other person voluntarily execute the series of muscular contraction she exhibited.

Now the simple matter of fact questions, did this woman swallow one grain crystalized strychnine, and survive the effects; and if so, what amount of influence had the camphor in bringing about this favorable result? are questions of no small interest, and practical importance.

I have given an exact and truthful statement of all the circumstances, adding nothing, suppressing nothing of importance, and taking all together, there does not seem any good reason to doubt her statement, so strongly corroborated by the facts.

I do not claim of course, any originality in the administration of either chloroform or camphor. You will find the following in the synopsis of Brath. Ret. page 342: "Give 2 grains pulv. camphor with half a teaspoonful of spirits of camphor every fourth of an hour; if necessary, a little morphine may be added."

"Dr. Pritchard reports a case in which three 5 grain lumps of camphor were successfully administered. Emetic, and the stomach pump were employed, and artificial respiration by Dr. Hall's ready method was necessary at one part of the tetanic spasms. Towards the decline of the tetanic movements, which lasted about 20 minutes, the camphor was combined with opium."

Respectfully yours, ROBT. M. DENIG, M.D.

Columbus, August 27, 1858.

PART SECOND.

AMERICAN AND FOREIGN INTELLIGENCE.

Memoir on the Use of Metallic Sutures and Metallic Ligatures in Surgical Wounds and Operations. By J. Y. SIMPSON, M. D., Professor of Medicine and Midwifery in the University of Edinburgh.

Part II. *Relation of Living Structures to Metallic and Organic Foreign Bodies.*—In pursuing the study of metallic as compared with organic surgical threads, there are two general laws in surgical pathology which it seems necessary to consider before we can fully understand the relative advantages and disadvantages of these two forms of surgical sutures or ligatures. The two laws to which I allude have hitherto attracted very little attention from surgeons. They refer to the comparative passiveness of living tissues to the presence and contact of metallic materials, and their excitability and irritation, on the other hand, under the presence and contact of foreign organic bodies derived from the vegetable or animal kingdoms.

Law of Tolerance of Living Structures for the Presence of Foreign Metallic Bodies.—Metallic bodies when lodged and imbeded without much mechanical contusion or injury in living tissues, produce comparatively little or no irritation by their presence; and if inflammation is excited by their contact, that inflammation is usually limited to the first or adhesive stage, and does not progress onward to the higher stages or terminations of suppuration and ulceration.

In corroboration of this important general law, let me adduce some individual instances in evidence.

In the lower animals, when a portion of metal is placed in the subcutaneous tissues, and the external wound is closed over it, the foreign body becomes imbeded and fixed in its site, without leading to the production of suppuration and ulceration in the tissues in contact with it. With a view of testing this fact, I had placed deeply in the back and sides of a pig, small pieces of gold, silver, copper, lead and iron. We found no pus effused around these metallic bodies, when the wounds were opened and carefully examined six days subsequently. Around the pieces of gold, lead and copper, there was a thickish layer of coagulable lymph or fibrin, making as it were a complete cast of the foreign body; but showing under the microscope nothing but exudation corpuscles, and granules. Around the pieces of silver and iron there was no such distinct appearance of an incipient cyst;* for the portions of metal seemed to be closely

*In a later experiment I have seen a cyst formed around an angulated piece of bright steel.

Respectfully yours,
ROBT. M. DENIG, M.D.

Columbus, August 27, 1858.

embraced by the surrounding tissues, with little or no adhesive exudation between their contiguous surfaces. In some experiments which Mr. Syme made several years ago upon the dog, with the view of ascertaining whether or not the periosteum could throw out bone upon its internal surface, he introduced between the radius and its periosteum a thin plate of metal, using, I believe, lead for the purpose; and the superficial parts were found to heal "kindly" over and around this foreign body, apparently without any tendency whatever to suppuration or ulceration. * * * He exposed the radius in another experiment, cut away the periosteum, and surrounded the denuded bone with a piece of metal. At the end of six weeks he found a thick, rough capsule formed, inclosing the metallic plate.*

But the law holds equally good, that metallic bodies may be lodged within the living tissues of the human body without creating any considerable amount of irritative reaction.

It is a well-known fact in military surgery that in gunshot wounds, after the immediate effects, in the way of contusion and injury, resulting from the mechanical force of the ball, have passed away, the metallic ball itself may lodge in the tissues of the body for months or years with impunity; more especially if the internal vital organs are not touched by it †

Since commencing these inquiries I have had reported to me, by my medical and other friends, several instances in which bullets have remained lodged within the bodies of officers and soldiers still living, and who received them at Waterloo and in the Peninsular War, forty years ago and upwards. One of the oldest and greatest military surgeons, Ambrose Parê, when speaking on this subject, remarks: "Leaden bullets (says he) lie in some parts of the body some whiles seaven, eight, or more yeares, so that they neither hinder the agglutination of the wound, neither doth any other symptome happen thereupon, as I have diverse times observed; until at length by the strength of nature forcing them, and their proper weightines bearing them downewards, they shew themselves in some lower part, by their swelling or bunching forth, so that they must be taken forth by the hand of the Chirurgion. For they say Lead hath a certain sympathy and familiarity with man's body, chiefly the fleshy parts thereof. Wherefore it neither putrifies itself nor causeth the flesh to putrefie; besides it hath an excellent faculty in cicatrizing old ulcers."‡

To the same effect in his essay on gunshot wounds, the celebrated John Hunter, when speaking of the practice of leaving the ball, and not dilating the gunshot wound on that account observes, "This practice has arisen from experience; for it was found that balls, when obliged to be left, seldom or ever did any harm when at rest,

*Transactions of the Royal Society of Edinburgh for 1840, vol. xiv. p. 162.

†Sometimes, however, "balls (observed Professor Traill) have been lodged in various parts of the body, even the chest, or the heart itself, for years, without causing death."—*Outlines of Medical Jurisprudence*, p. 87.

‡English edition of Ambrose Pare's Works, p. 429.

and when not in a vital part; for balls have been known to lie in the body for years, and are often never found at all, and yet the person has found no inconvenience. This knowledge of the want of power in balls to promote inflammation when left in the body arose from the difficulty of finding them, or extracting them when found, and therefore in many cases they were obliged to leave them."*

It would be easy to adduce evidence of the same kind from the works of other and later military surgeons, as John Bell,† Guthrie,‡ B. Cooper,§ etc., but additional proof is perhaps superfluous, as the fact is one generally acknowledged in Surgical Pathology.

Seeing thus that musket balls may remain lodged without irritation or inconvenience, in contact with the structures of the living body, it is scarcely necessary to add—what the experience of almost every surgeon can corroborate—that leaden pellets and small shot do often in the same way lie imbedded for years beneath the skin, or more deeply in the living structures.

In these cases of leaden bullets and pellets lodged for any length of time, the surrounding soft tissues, or a special cyst, embrace and hold firm the enclosed foreign body. "When (observes Mr. Guthrie),‖ a ball has been lodged for years, a membranous kind of sac is formed around it, which shuts it in, as it were, from all communication with the surrounding parts. If it should become necessary to extract a ball which has been lodged in this manner, the membranous sac will often be found to adhere so strongly to the ball that it cannot be got out without great difficulty, and sometimes not without cutting out a portion of the adhering sac."

In an old patient, who had been affected more than once with syphilis, Morgagni found on dissection a leaden pistol-bullet, which had been lodged in his thigh thirty years before death. "There was," he adds, "a cyst or membranous follicle about that bullet, with which it was straitly inclosed all around."**

Flat pieces of lead may lie embedded in the tissues of the human body, with apparently similar impunity to round bullets and pellets. Mr. Samuel Cooper quotes a remarkable example of this kind from M. Bordier, that happened at Pondicherry: "An Indian soldier (says Mr. Cooper), angry with his wife, killed her and attempted to

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*Hunter's Works, by Palmer, vol. iii. p. 555.

†Discourse on the Nature and Cure of Wounds, p. 206. "A ball (says Mr. Bell) often lies without danger buried in the flesh for years or for life."

‡Treatise on Gunshot Wounds, 1820. "When (Mr. Guthrie remarks) a ball has been lodged for years, we find that a membranous kind of sac is formed around it, which shuts it in as it were from all communication with the surrounding parts, and in some instances it seems to do so, and the patient suffers no sort of inconvenience from its retention."—P. 96.

§Principles and Practice of Surgery, p. 28. "It is not (Mr. Cooper observes) a matter of much importance as might be supposed, that the ball should be extracted, as there are very many instances of persons in whom a ball has remained without producing any ill effect by its presence."

‖Commentaries on the Surgery of the War, etc., 1853, p. 34.

**Seats and Causes of Diseases (Alexander's Translation), vol. i. p. 862.

destroy himself, by giving himself a wound with a broad kind of dagger in the abdomen, so as to cause a protrusion of the bowels. A doctor of the country being sent for, dissected between the muscles and skin, and introduced a thin piece of lead, which kept up the bowels. The wound soon healed up, the lead having produced no inconvenience. The man was afterwards hanged, and M. Bordier when the body was opened, assured himself more particularly of the fact."*

The instances I have cited refer only to lead, or lead and some of its alloys, lying in contact with the living tissues. And some authors, indeed, imagine that this negative property of harmlessness belongs, among the metals, to lead alone. "Bullets of stone (remarks Ambrose Parè),† iron, and of any other metal than lead, are of another nature, for they cannot remain any long time in the body without hurt; for iron will grow rusty, and so corrode the neighboring bodyes, and bring other maligne symptomes." But the evidence of other metals remaining harmlessly embedded in living tissues, or passing harmlessly through them, is equally strong. Needles, for example, may, as is well known to surgeons, long remain embedded in the living tissues with little or no inconvenience. Even when they travel about from part to part from pressure of the muscles, etc., acting mechanically on one or other of their extremities, they produce little irritation in the course of their transit.‡

"If foreign bodies (says John Hunter) are such as can be made to change their situation by the action of the body upon them, such as pins or needles, or from gravity, as is the case sometimes with bullets, then the parts through which they pass seem not to be much altered or disturbed."§

Various other metals, or combinations of metals, besides lead and iron, possess the same negative property of harmlessness; and, indeed, this principle has been taken advantage of in the religious and other rites of some nations. Thus, the Rev. Howard Malcolm, in his account of the religion of the Burmese, states: "Amulets and charms are worn by both sexes, but not by a large number, as among Hindoos. One of these, common among military men, is the insertion of pieces of gold, or other metal, under the skin of the arm, between the elbow and shoulder. I was allowed," Mr. Malcolm adds, "by one of the Christians at Ava, to take from his arm several of these. They are of gold, inscribed with cabalistic letters."‖ Some of these Burmese warriors are, observes Captain Yule, in his

*Cooper's Surgical Dictionary, p. 611; and Journal de Medecine, vol. xxvi. p. 538.

†English Edition of Pare's Surgery, p. 249.

‡Let me here, though in anticipation of the sequel, state, in answer to various inquiries, that at present I believe that iron wire or iron thread, such as No. 30 of the wire-maker's guage, will be found the cheapst, strongest, and perhaps altogether the best metallic thread, both for surgical sutures and ligatures.

§Hunter's Works, vol. iii. p. 287.

‖ Travels in South-Eastern Asia, etc., vol. i. p. 307.

late work on Burmah, said to retain the practice "of inserting a piece of metal under the flesh to make themselves invulnerable."*

Accident is frequently furnishing us with examples of the same law of tolerance of the living tissues for foreign metallic bodies, and that under conditions where two metals are united. For instance, our common tinned iron pins often enough become accidentally lodged in the external tissues of the body, or are swallowed and even traverse different parts of the body without showing much irritation or inflammation along their track. "In the cattle which feed in bleaching fields, there is not (observes Mr. Hunter) one of these killed without having their stomachs, etc., stuffed full of pins, and no seeming inconvenience takes place, for they appear to be healthy, and fatten as readily as other cattle."† Among "the cases that have occurred of persons swallowing pins, needles, etc., they have (says Mr. Hunter) been found to travel almost over the whole body, without producing any effect except in some situations exciting some sensations." Mr. Hunter, in the chapter from which I have made these quotations, is inclined to argue that the same material which will produce little or no irritation, or at the most only adhesive inflammation in the deeper parts of the body, will more and more readily induce suppuration as it approaches the external or cutaneous surface, "external parts (to use his own words) assuming the suppurative inflammation more readily than the internal"—p. 288. Hence he would expect an abscess to form around a bullet, pin, or needle lodged immediately beneath the skin, although the same bodies would excite no such inflammatory reaction when they were lodged in the deeper structures of the body. But suppuration does not by any means always, or indeed frequently attend the approach of metallic bodies to the surface; pins, needles, and bullets are often extracted by a slight incision through the skin, without a vestige of pus being traceable around them; and when they do, as, indeed, sometimes happens, lead to suppuration, when lodged superficially and subcutaneously, the inflammatory or suppurative action is generally, if not always, the result of compression and damage of the soft tissues lying around the foreign body, these soft tissues being, as the foreign body approaches the external surface, always liable to be contused and injured by every form of accidental outward pressure that impinges upon that surface. In fact, in the harmlessness of acupuncture needles, and, latterly, in the perfect innocuousness of metallic stitches, we have abundant evidence that metallic bodies produce, *per se*, as little irritation when lodged in the skin and mucous membrane, as they do when they are lodged in any of the deeper structures of the body. And, no doubt, Mr. Hunter was far more correct when he observed, "It is probable that these cases of pins, etc., owe their want of power in producing suppuration, not entirely to situation, but, in some degree, to the nature of the sub-

* Narrative of the Mission to the Courts of Ava in 1855, p. 208.

† Hunter's Works, vol. iii. p. 282.

stance, METALS, perhaps, not having the power of irritation (inflammation) beyond the adhesive, for when the adhesive has taken place, the part appears to be satisfied."*

This great and important practical law of the tolerance of living structures for the presence and contact of pure metallic bodies has been fully expressed by an anonymous writer in the *Edinburg Medical and Surgical Journal* for 1827.† The observations which this writer made thirty years ago are so apposite to the present inquiry, that I need make no apology for quoting them in full. "It is a remarkable circumstance (says he) that the acupuncture needles never cause inflammation in their neighborhood. If they are rudely handled, or ruffled by the clothes of the patient, they may produce a little irritation; but if they are properly secured and protected, they may be left in the body for an indefinite length of time, without causing any of the effects which usually arise from the presence of foreign bodies. In one of M. Clocquet's patients they were left in the temples for eighteen days; and in cases in which needles have been swallowed, they have remained without causing inflammation for a much longer period. It appears probable, from the facts collected on the subject, that metallic bodies may remain imbedded in the animal tissues without being productive of injury; and that the property of irritating and inflaming by mechanical contact belongs only to those bodies which are non-conductors of electricity. But farther experiments are required to substantiate this curious and important law."

The author of the preceding paragraph, though right in his generalization, is no doubt wrong in his explanation of the facts. Other inorganic bodies, besides the metals, may be lodged with impunity in the living tissues; and this, too, though they are non-conductors of electricity. Small pieces of glass, for example, occasionally remain long imbedded in the body in the same way as pieces of metal do. Mr. Hunter, indeed, points out this fact specially.‡ A medical

* Hunter's Works by Palmer, vol. iii. p. 288.

† See the Review of the Essays of Clocquet, Sarlandiere, Pelletan, Pouillet, Carraro, and Dantu de Vannes, in the Edinburg Medical and Surgical Journal, vol. xxvii. p. 197.

‡ Loc. cit., p. 288. After speaking of "metals perhaps not having the power of irritation beyond the adhesive," Mr. Hunter observes: "This appears also to be the case with the introduction of glass, even in superficial parts: a piece of glass shall enter the skin just deep enough to bury itself; inflammation shall come on; the wound in the skin, if brought together, shall heal by the first intention; and the inflammation shall not exceed the adhesive, but rather degenerate into the disposition to form a sac, by which means a sac is formed around the glass, and no disturbance is given to the irritability of the parts. This was the case with Mr. Knight, apothecary, who had a piece of glass, three-fourths of an inch long, run into the palm of his hand, and remained there for ten weeks, without any further inconvenience than retarding the motion of the hand, and sometimes giving a pricking pain, when the sac was made to press upon the points of glass; this insensibility, however, arises from a sac being formed with such properties, but it cannot be assigned as a cause in the case of bodies moving with pins."

friend of mine has a small piece of glass imbedded in his lip, which has remained there with impunity for upwards of twelve years. I have heard of two or three cases of small pieces of glass lying quietly in the structures of the hand for long periods. An eminent surgeon had for twenty or more years a small piece of coal lying without inconvenience beneath the skin of the leg; and the small particles of carbon left by the explosion of gunpowder and by tattooing are well known to remain in the cutaneous tissues for a long lifetime without producing any irritation or disturbance. The Burmese, according to Mr. Malcolm, bury and carry not only gold, but also "sometimes small gems" under the skin of their arms.* In fact, there seems to be a law of tolerance more general than the passiveness of living tissues to the presence in them of metallic bodies; this higher and more comprehensive law apparently being that living structures may endure with impunity the presence of inorganic, and even of dense organic materials, provided they are not porous and capable of absorbing and retaining within them the secretions which are thrown out around them.

Before closing these observations on the tolerance of living tissues for metallic bodies, let me add, that in this as in many other instances, when once a general principle is established, we often find that it will serve us as a clue to the explanation of facts of an equivocal character already alleged, but which from their very strangeness, and previous inexplicability, were still regarded with doubt by some minds. For example, we have already seen that one old mode of attempting the radical cure of inguinal hernia was by the "golden stitch," or by encircling the neck of the hernia sac with a permanent gold wire, which wire was left imbedded in situ, and the wound closed over it. The past history of surgery shows that this practice was followed as far as the safety and life of the patient were concerned, with a degree of frequency and impunity which was startling under our modern pathological ideas of the facility with which injuries and wounds of the peritoneum run on to dangerous degrees of inflammation and death.† In the same way these ideas have again been upset in modern days by the new mode of radical cure for inguinal hernia introduced by Wurtzer, Rothmond, Spencer Wells, and other surgeons, and which essentially consists in infibulating the hernial sac, and placing and keeping for several continuous days a stitch through this inverted portion of the peritoneal sac. We have proof of the innocuousness of this method of operating in the fact that Rothmond has, it appears, practiced the operation now upwards

* Travels in Asia, vol. i. p. 307.

† In describing this old method for the radical cure of hernia, Purmann, for example, remarks, in reference to the frequency and comparative safety of the operation: "The famous and excellent operator at Leyden, Schmaltzius, was so expert at it, that you could not perceive how he performed it without a diligent circumspection; yea, I verily believe, he could have cut fifteen patients in an hour's time, if he had had so many. When I was there, he cut but six in an hour, all which succeeded; but then he took more time than ordinary."—*Chirurgia Curiosa*, Book II., chap. 13, p. 161.

of one thousand times without losing a patient, or seeing one case of fatal peritonitis excited by this prolonged puncture and transfixion of the peritoneum. In all probability the explanation of the comparative safety of both these modes of radical cure of hernia is simply this: The thread or needle used is metallic, and hence, in accordance with the general law which we have been considering, inflammation is excited by the metallic thread or metallic pin only up to the degree or stage of adhesion. If a silken thread is used for the purpose, then, as shown indeed by the result of Gerdy's experience upon the radical cure of inguinal hernia, the same operation comes to be attended by a higher and far more dangerous degree of inflammatory action.*

Law of Non-tolerance of Living Tissues for the Presence of Dead Foreign Organic Bodies.—When dead† organic bodies, belonging either to the animal or vegetable kingdom, are lodged or imbedded in the living tissues, they, as a general law, speedily produce morbid irritation and excitement, and a degree of inflammation which soon terminates in suppuration and ulceration.

In experiments upon the lower animals, pieces of lint-cloth, etc., lodged in the cellular tissue, etc., excite suppurative inflammation, when portions of metal of equal size, lodged in their neighborhood, and at the same depth, excites only adhesive inflammation.

Foreign or dead organic substances are sometimes found lodging in and complicating wounds in the human subject, particularly gunshot wounds.

The walls of a gunshot wound along its tract through the soft tissues of the body, are often to a greater or less extent killed by the force and blow of the ball, and consequently slough. Whenever a portion of soft tissue is in this way deprived of vitality, and becomes a dead organic substance, it excites in the contiguous living structures suppurative and ulcerative inflammation to such a degree as is necessary for the disjunction and elimination of the dead organic tissue.

When any portion of the soft tissue dies or sphacelates from any other cause, mechanical or morbid, it gives rise in the same way for its separation and removal to suppurative and ulcerative inflammation in the contiguous living structures.

The same law holds true in regard to a piece of dead or necrosed bone. Suppurative and ulcerative action is set up in the living tissues around it. When a piece or splinter of bone is struck completely off by a gunshot wound, the lodgment of this separated fragment of bone prevents, sometimes for a long period, the wound from closing, and keeps up constant morbid irritation and suppuration by its presence.

Pieces of cloth are occasionally lodged in the structures of the

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* See Mr. Spencer Wells' paper "On the Radical Cure of Inguinal Hernia," in the Dublin Journal of Medical Science, for May, 1858.

† We shall afterwards see that living organic bodies, as imbedded entoza, do not, while living, give rise by their presence to suppurative or ulcerative inflammation.

gia Curiosa, Book II., chap. 13, p. 161.

human body by gunshot wounds, the ball carrying before it and with it portions of dress, etc. The law of the non-tolerance of living tissues for the presence of foreign organic bodies, is strongly illustrated by the irritation and suppuration to which such imbedded portions of cloth give rise. The fact is one well known in military surgery, and is alluded to by various authors. Thus, for example, Mr. John Bell, in his "Discourses upon Wounds," when treating of the circumstances which may impede the healing of a gunshot wound, specially point out, that, as a cause of its slow cure and of its continuous irritation and suppuration, "there may remain some foreign body within the wound; now," he continues, "a ball *never* produces these; a broken and corrupted bone would presently be known by the black color and fetid smell of the discharge; and if the slow healing of the wound is known to proceed from neither of these causes, then most likely it arises from some piece of *cloth* which has passed in along with the ball.*"

In the practice of his profession, the surgeon often takes advantage of the same law; for when he wishes the sides of any artificial wound or opening which he has made not to adhere, he knows he can effect this purpose by lodging between the walls of the wound a piece of charpie or other foreign body; and he is further certain, by maintaining the foreign body in this position for a few days, that suppuration in the walls of the wound will be excited by its presence.

A very small and minute fragment of dead animal or vegetable substance is sufficient, in accordance with this law, to excite suppuration in the living tissues among which it is lodged. Several years ago various eminent surgeons tried for a time the practice of cutting off both the ends of the ligatures with which they had tied vessels in amputations and other operations. The quantity of organic ligature required to be thus left buried in the closed wound around each deligated vessel was extremely small.

Mr. Lawrence calculated that the loop of silk thus left around each artery was, perhaps, not heavier than one-fiftieth of a grain; and the weight of flax or hemp thread required was not much more.† But though this vestige of foreign organic matter is not generally sufficient to prevent the union of the wound by the first intention, yet the practice has latterly been almost entirely given up by surgeons because they found that, as a general law, this minute fragment of organic ligature thus left imbedded in the wound became inclosed in a small abscess, and by its presence gave rise to a slow process of suppuration and ulceration, by which the ligature was ultimately carried out, and discharged from the surface of the

* Discourses on the Nature and Cure of Wounds, p. 203.

† "A portion," says Mr. Lawrence, "sufficient to tie a large artery, when the ends are thus cut off, weighs between 1-50th and 1-60th of a grain; a similar portion of the thickest kind I have tried weighs 1-20th of a grain, and of the slenderest 1-100th. These ligatures do not interfere with the process of adhesion."—*Medico-Chirurgical Transactions*, vol. vi. p. 103.

† We shall afterwards see that living organic bodies, as imbedded entoza, do not, while living, give rise by their presence to suppurative or ulcerative inflammation.

body. "By some both ends," says Professor Miller, "are cut away; in the belief that adhesion is thus favored throughout the line of wound, as doubtless it is; and in the hope that the noose will become encysted, and give no further annoyance—as certainly will not happen. Adhesion under such circumstances is a misfortune; for the noose and its contained slough are to all intents and purposes foreign matter; as such their presence will be resented by the surrounding living textures; and as such they will be extruded by suppuration. Sooner or later—often after cure has apparently been completed—deep abscess forms painfully and slowly, having approached the surface, pus is discharged, and with it, its cause, the noose. Not until this latter has been put forth will the pain and discharge cease.*"

Long organic ligatures of silk or thread, thrown around bleeding vessels, and left hanging out of the surgical wounds, keep up in the same manner by their presence and contact a continuous process of suppuration along their tract; and at the point of deligation the tied artery is cut through by ulceration, before the ligature becomes separated and removed.

Organic sutures formed as suture-threads have hitherto been of silk, flax, or hemp, act in accordance with the same general law of the non-tolerance of living tissue for foreign organic substances, and when left for a short time, always at last excite suppuration and ulceration by their presence.

Indeed the common organic sutures hitherto used by surgeons do thus so often prove noxious centres and sources of irritation in the lips of wounds as to have led, repeatedly, in the past history of surgery, to their more or less partial or complete rejection from practice. Above a century ago the published observations of Pibrac and Louis, led for a time, to the almost total discontinuance of sutures in closing and keeping in apposition the lips of wounds, while the same object was attempted to be obtained principally or entirely by the aid of position, plasters, and bandages. The best surgeons of modern times, while returning again to the moderate use of silk and similar sutures, have very generally acknowledged the irritating and unhappy effects occasionally produced by them, particularly when too long detained. Thus the late Professor Samuel Cooper, in the last edition of a work that was long regarded as a standard exposition of English Surgery, remarks, that it must be allowed that the cause of some wounds not uniting, "is entirely ascribable to the irritation occasioned by the sutures themselves."†

"Since (he observes) the sutures *always* act as extraneous bodies in the exciting more or less inflammation and suppuration round them, there can be no doubt that their employment is invariably wrong, whenever the sides of a wound can be maintained in contact by less irritating means, with equal steadiness and security. For

* Miller's Principles of Surgery, p. 362.

† Cooper's Surgical Dictionary, Article "Sutures," p. 1211.

what is it that generally counteracts the wishes of the surgeon, and renders his attempts to make the opposite surfaces of wounds grow together unavailing? Is not the general cause too high a degree of inflammation, which necessarily ends in suppuration? Are not sutures likely to augment inflammation both by the additional wounds of the needles, and the still more pernicious irritation of the threads, which always act as foreign bodies, sometimes producing not merely an increase of the inflammation and suppuration in their tract, but frequently ulceration or sloughing of the parts; and, in particular constitutions, an extensive erysipelatous redness. More wounds are hindered from uniting by sutures than such as are healed by them."*

Or let me quote on this point the author of the last work on Surgery, published in this country:—

"Sutures (says Professor Pirrie) should not be employed when it is possible to maintain steady apposition without them. During the first day or two, and before they have cut their way by ulceration through the skin, they certainly act more powerfully than plasters in maintaining coaptation—one of the essentials for obtaining adhesion; but they also irritate much more, and, if not speedily removed, excite, at least in their immediate vicinity, sufficient inflammation to lead to ulceration, preparatory to their spontaneous extrusion, and the vascular action thus set up in one part of a wound, may extend so far as materially to interfere with or prevent adhesion. Even under the most favorable circumstances, a slight suppuration seldom fails to follow in the track of each stitch; and though, when the action stops here, the general healing of the wound may not be retarded, still the greater marking of the cicatrix, at each of these points, is an additional reason for avoiding their employment, when possible, especially on exposed parts † Sutures, then (concludes Dr. Pirrie,) are to be employed when there is difficulty in keeping the parts satisfactorily in contact by means of plasters; but they should be as few and far between as consists with the attainment of their immediate object."

In short, Professor Pirrie, like many other eminent surgeons, holds with Mr. Hunter, that plasters have an advantage over stitches, by not inflaming the parts over which they are applied; "and (to use Mr. Hunter's own words) by neither producing in them suppuration or ulceration, which stitches always do." (P. 257.)

Exceptions to the Two preceding Laws in Surgical Pathology.—In pathology there are many general, but few or no universal laws. The two preceding general laws, like all other general laws in medicine, are liable to more or fewer exceptions, apparent or real. To understand the full practical value of these two laws or principles, let me here state one or two of the more important exceptions to them.

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* Cooper's Surgical Dictionary, Article "Sutures," p. 1211.

† Principles and Practice of Surgery, by Professor Pirrie, of Aberdeen, p. 64.

1. The presence of metallic bodies or threads is liable—like the presence of organic bodies or threads—to produce in living tissues absorption, with the formation of pus—or, in other words, suppuration and ulceration—provided it is combined with strong constriction of, or strong pressure upon these tissues. In fact, surgeons have used, as we have already seen, metallic threads in this way, to produce by firm and forced constriction rapid ulcerative absorption in dividing the necks of polypi, or the solid walls of a fistula *in ano*. Here it might seem as if the metallic material excited by its presence not adhesive, but suppurative and ulcerative inflammation. But this exception to the general law of the tolerance of living tissues for metallic bodies is more apparent than real. For the truth is that the resulting rapid ulceration and absorption in these instances are the result of the mere strong mechanical constriction and pressure of the living tissues, and quite independent of the agent or material, by which that constriction and pressure are produced. The effect would equally follow, whether the ligatures were organic or inorganic, provided only the physical amount of constriction and pressure made by them upon the involved living tissues were sufficient in degree. But the observation becomes important in another point of view. For it shows us that we must not expect metallic, any more than organic suture-threads to remain quite free from any chances of suppuration and ulceration in their courses or tracks, provided they are so placed in a wound as to drag and press greatly upon the included tissues. The living tissues will only in general tolerate, without suppuration or ulceration, metallic threads, on the condition that they are so placed and so adjusted as not to produce unnecessarily strong tension and traction upon the structures through which they pass.

2. Though in surgery organic threads and ligatures, as a general law, speedily produce, by their presence, suppuration and ulceration in tissues in contact with them; yet there occasionally occur in practice exceptions, real or apparent, to this common principle in surgical pathology. Sometimes, though very rarely, an effusion of coagulable lymph only, and not of pus, is thrown out around the organic threads, or, in other words, its presence for five or six days, or longer, excites only adhesive, and not, as usual, suppurative and ulcerative inflammation. Again, sometimes another result is seen, viz., that when silk or flax threads and ligatures are left in the living structures for weeks or months, they in the first instance excite, as usual, more or less suppuration and ulceration in the tissues immediately in contact with them; but after a time the secretion of pus ceases, the included portion of thread becomes dried and rigid, like a non-porous, inorganic material, and subsequently becomes fixed in its site by effused coagulable lymph and granulations. I have repeatedly seen this series of changes in watching the effects of sutures in the lower animals; sometimes with one loop of suture thread remaining moist and the centre of a purulent collection, and a contiguous thread dried, stiffened, and fixed *in situ* by coagulable lymph and granulations. Similar examples occasionally occur in

the human subject. Last year, in a case of complete and extensive laceration of the perineum, I brought the edges of the rent together an hour or two after delivery, by the usual deep quilled suture, and by some superficial stitches in the skin of the perineum, and the mucous surface of the vagina. Three days afterwards, the patient's medical attendant removed the quilled sutures, and the superficial cutaneous stitches; and the reunion of the parts was found complete. I did not see the patient from the day of operating, till three months afterwards, when I was asked to ascertain if there was anything wrong in the vagina. In the posterior wall of the vagina, in the site of the previous laceration, I found, still *in situ*, the two silk stitches, that had been used to bring the mucous walls of the rent into apposition, but which had escaped notice when the other threads were withdrawn. The embedded loops were dry and arid, and their sites marked by an accumulation of granulations.

Such exceptions, however, by their rarity only prove the extent and importance of the very law of which they thus form occasional variations.—*Med. Times and Gaz.*

Constipation of Three Months completely removed.—A boy aged eleven years, from Essex, was admitted into the Royal Free Hospital, on the 12th of April, 1858, for obstinate constipation, which had existed for three months, without a single motion. His abdomen was enormously swollen, quite solid almost throughout, from the packing of the bowels, and measured forty-three inches in circumference. There were many symptoms present, solely due to the interference in the natural circulation through such an important channel as the alimentary canal. Dr. Brinton prescribed an enema, which could not be introduced, as the rectum to the verge of the anus itself was absolutely packed with matter. This was got rid of by means of scraping it away, and when this part of the bowel was pretty well cleared, the size of the abdomen was reduced to thirty-nine inches and a half, when enemata began to act. The most useful and efficacious enema now was croton oil, castor oil, turpentine, and gruel. This was given every few days, until the alimentary canal was perfectly cleared, removing an enormous quantity of scybalæ and hard feces; and the abdomen measured on the 19th of July, the day of his discharge, but twenty-eight inches, its natural size.

This boy had had other enemata previous to that containing croton oil, and although they acted slightly when once the rectum was emptied, still the croton oil appeared to be the most efficacious. He was taking inwardly at the same time, at first colocynth and aloes, and latterly compound rhubarb pill every night, the bowels being relieved daily for the last month.

Constipation was an habitual thing with him, from a general torpidity of his alimentary canal, and he did not seem to have any

hepatic sluggishness. He took but a small quantity of medicine by the mouth until latterly, and the case illustrates very well the value of proper enemata, judiciously administered. When the boy first came into the hospital, and lay on his bed, the prominence of the abdomen was so great that he could not see his feet. He passed a great deal of urine during his constipation, and his appetite was excellent. When he left the hospital, the abdomen was supported with buckle bands. We may remark, that when first admitted he was galvanized over the abdomen, but that proved of no service of itself till the enemata began to act.—*Lancet, July* 31, 1858.

Belladonna in Juvenile Incontinence of Urine.—The use of belladonna against incontinence of urine in children, as strongly recommended about a year ago by Mr. Brooke, of the Westminster Hospital, has, we believe, well borne the test of the trials which his laudation of it induced. Several surgeons have, we know, formed favorable opinions of its efficiency. A case under Mr. Hutchinson's care, at the Metropolitan Free Hospital about three months ago, afforded very conclusive evidence of its power. The patient was a boy of ten who had from infancy been exceedingly troubled by inability to retain his water. Nightly incontinence was a matter of rule, and very often the urine would escape during the daytime also. Nux vomica, sesquichloride of iron, etc., had been fairly tried, and without benefit. At first the belladonna seemed to do no good, but being pushed until symptoms of poisoning were apparent, it finally effected a complete cure. The bladder appeared to have wholly lost its morbid irritability, and during six weeks that the boy remained under observation, his mother stated that no single instance of incontinence had occurred. The remedy was given in solution in water, and without any adjuvant whatever. Belladonna is one of our remedies which certainly deserves a more thorough clinical investigation of its powers than it has yet received.—*Med. Times and Gaz., July* 31, 1855.

Neglect of Brain Disease.—The poor overwrought brain meets with but little attention and consideration when in a state of incipient disorder. The faintest scintillation of mischief progressing in the lungs, heart, liver, and stomach, immediately awakens alarm, and medical advice and treatment are eagerly sought; but serious, well-marked symptoms of brain disorder are often entirely overlooked and neglected; such affections frequently being permitted to exist for months without causing the faintest shadow of uneasiness or apprehension in the mind of the patient or his friends. Morbid alterations of temper—depression of spirits, amounting sometimes to

melancholia, headache, severe giddiness, inaptitude for business, loss of memory, confusion of mind, defective power of mental concentration, the feeling of brain lassitude and fatigue, excessive ennui, a longing for death, a want of interest in pursuits that formerly were a source of gratification and pleasure, restlessness by day, and sleeplessness by night, all obvious indications of an unhealthy state of the functions of the brain, and nervous system, rarely, if ever, attract attention, until the unhappy invalid, becoming unequivocally deranged, commits an overt act of insanity. Then, the exclamation is, "Poor fellow, his mind has been affected for months!" and no one expresses any surprise that he should, in such a state of mental disorder, have hung himself or cut his throat. It is difficult to induce the public to take a common sense and right view of this important subject; for, if the saving of life is the object, it is to the public mind we must plainly address ourselves. If a person in a previous state of mental and bodily health is conscious that abnormal changes are taking place in the mind—that trifles worry and irritate—that the brain is evidently unfit for work—that the spirits are flagging—that all the evils of life are magnified; if he is disposed to be fanciful—imagining things to exist that have no existence apart from himself—believing that kind friends ill use and slight them; if symptoms like these, or analogous to these, are associated with headache, derangement of the stomach and liver, and want of continuous sleep, the patient may assure himself that the state of the brain is abnormal, and requires careful consideration and treatment.—FORBES WINSLOW, *Journal.*

Biographical Sketch of the late Prof. ROBERT HARE, M. D.

The grave has hardly closed over the remains of one talented and eminent member of the faculty, ere we are called to mourn for another, one equally known to science, and whose fame has extended throughout the civilized world.

Dr. Hare's life has been one of unremitting labor in the cause of science, and by his ability and research he has contributed a large number of valuable discoveries to the list of the present century.

He was born in Philadelphia, in 1781. His father was an extensive brewer, and young Hare, for some time, was engaged in this occupation also. He entered the Chemical Department of the Pennsylvania University about the year 1800, and that he here well employed his time is evinced by the fact that only two years after, he contributed his first invention, the oxyhydrogen blow-pipe, an apparatus by which he was enabled to reduce the hardest substances, and thus evolved many of the metallic bases. He communicated to the Chemical Section of the British Association for the Advancement of Science, while on a visit to England, the fact of his having thus reduced 25 ounces of platina to a fluid state.

For this instrument he was awarded, by the American Academy of Arts and Sciences, the Rumford medal. He subsequently modified it so as to feed it with alcohol.

A very important use of this instrument was afterwards discovered by Lieut. Drummond, who, by the introduction of a piece of lime into the flame thus produced, was enabled to give to science the celebrated "lime light," better known as the "Drummond light."

About the year 1819, he produced a new and valuable galvanic instrument, well known as "Hare's calorometer," concerning which, he published a detailed account in *Silliman's Journal*. A year or two later, by the same medium, he announced his new galvanic theory, together with a description of a new galvanic instrument, to which he gave the name of the "Galvanic Deflagrator," commonly called "Hare's Deflagrator." By this also he fused platina, etc.

In a little while we find him contributing a new and much improved gasometer, a eudiometer, a litrometer, to ascertain the specific gravity of various fluids, the hydrostatic blow-pipe, the single gold-leaf electroscope, and a host of smaller instruments, or improvements in old instruments.

Nor was it only to chemistry that he made such valuable additions, for in materia medica we are indebted to him for many important improvements, etc. Thus, we have the process for denarcotizing laudanum, and a method of detecting very minute quantities of opium while in solution.

In 1818, he succeeded Dr. John Redman Coxe in the chair of chemistry in the Medical Department of the Pennsylvania University, which he filled with increasing reputation till 1847, a period of twenty-nine years. As he never published any systematic work (his *Compendium of Chemistry* being only a text-book for his pupils,) these lectures are the only record of his many and brilliant discoveries, but they alone are sufficient among the immense number of pupils who have profited by his instruction, to cause him to live forever as a model of industrious and untiring labor in the cause of science.

After his resignation from the University, at which he was elected Emeritus Professor of Chemistry in that school, he paid much attention to meteorology, and read several papers before the American Philosophical Association on tornadoes, in which he attributed the atmospheric disturbances to an electrified current of air. As all new theories meet with more or less violent opposition, of course this was not destined to be received quietly, and on its promulgation, he encountered a storm almost as great as one of the tornadoes for which he was endeavoring to account; and many fierce conflicts occurred at the meetings of the society, between Dr. Hare and his rival investigators.

For more than fifty years he has been an active scientific man, though these pursuits did not prevent him from finding time to mingle in society, and enjoy the relaxation of domestic pleasure. By

his talented mind, he rendered himself agreeable in conversation, and being of a prepossessing manner, he made for himself hosts of friends.

If, in the weakness of age, he may have fallen into any of the popular errors, we must recall the past, and reflect upon the numberless services he has rendered to the world, while yet in his prime, and we will thus find sufficient to counterbalance all his errors.

He died in his native city, on Saturday, May 15th, 1858, in his seventy-seventh year, of typhoid peneumonia.—*Med. & Sur. Reporter.*

Menstruation During Pregnancy.—That a discharge, more or less identical with the ordinary catamenial flow may occur during pregnancy, is admitted by a majority of experienced observers. The following case under the care of Dr. Graily Hewitt, is an interesting example of this kind:

Mary B——, aged twenty-five, presented herself at the Samaritan Free Hospital in April last. She had been married for six years. The catamenia commenced at the age of twelve, and at first appeared every two months. After a suppression which lasted for six months, the discharge became regular at the age of fourteen, and continued so until after her marriage, the ordinary interval being a calendar month. She became pregnant for the first time rather less than six years ago, and was delivered of a healthy child, now alive. During this first pregnancy, however, it is stated that every fourteen days a bloody discharge occurred, lasting three or four days, and this periodic discharge persisted during the *whole period of gestation.* The discharge was rather paler than that observed before she became pregnant. The child was suckled for six months, and during lactation no trace of bloody discharge was noticed. A second pregnancy, attended with precisely the same phenomena, terminated favorably three years ago. The second child, also now alive, was suckled for fifteen months, and the catamenial discharge was absent in this second instance also during lactation. The catamenial discharge is habitually rather excessive in quantity, continuing usually six to seven days; it occasionally extends over twelve or thirteen, and this has been the case since she was married only.

There appeared no reason for disbelieving the facts of the case, as above stated, and as it was important to substantiate them as far as possible, further inquiries were made, the result of which confirmed the truth of the patient's account. From the birth of the second child up to seven months ago, she continued regular; after that time, symptoms of pregnancy were again observed, viz: morning sickness, pain in the legs and back, resembling those which occurred in her former pregnancies; but the catamenial discharge at the same time became irregular, the irregularity consisting, as in the former

two instances, in its taking place about every fortnight. This latter circumstance, indeed, as she herself observed, was one which, from her former experience, led her to consider herself again pregnant. Four months ago the abdomen became swollen, and the breasts much enlarged and painful. Three weeks later, while walking in the street, she slipped upon a piece of orange-peel; and twelve hours afterwards, pains, like those of labour, supervened, and a fleshy substance was expelled from the vagina. From an examination of these and other facts related, it is evident that abortion then took place. The abdomen immediately diminished in size, and has remained very small ever since.

The case is one of very considerable interest. Here, in fact, was an instance of the kind referred to by Desormeaux (quoted by Dr. Montgomery), "in which the appearance of the menses in small quantities, and at an unusual time, was almost a certain sign of conception." So, indeed, the patient, in the case just related, considered it to be. The same series of phenomena were observed, let it be observed, on *three* successive occasions.

The patient now sought relief for pelvic pain and menorrhagia, depending, as Dr. Graily Hewitt was led to believe on excessive uterine engorgement, and deficient involution of that organ after the abortion. No other morbid condition was detected on examination. —*Lancet*, July 24, 1858.

Neuroma of the Posterior Tibial Nerve; Amputation of the Foot.—An Irish boy, twenty-four years of age, was recently admitted into St. Bartholomew's Hospital, with a nodulated swelling of the sole of his right foot. It had commenced twelve months ago, and now involved the greater part of the sole in a series of nodules, associated with general swelling, which had lately extended to the inner margin of the sole. He had been three weeks in hospital, when Mr. Lawrence, after consultation with his colleagues, determined to remove the foot above the ankle joint. This joint was quite unaffected, and so were the other parts of the foot. The growth of the tumor had been somewhat rapid of late, and the surfaces of the nodules were discolored; and so far as could be judged by these, together with the history, it looked as if it were medullary sarcoma. The leg was amputated by Mr. Lawrence on the 22d of May, and the foot was subsequently carefully dissected, when a true neuroma was found, the size of a walnut, on the posterior tibial nerve, the intimate fibrils of which surrounded the tumour, or, in other words, the tumour was developed from one or more fibres of that nerve, and caused the others to be expanded over it, and separated from one another as the tumour increased in size. The affected nerve gradually got lost in the structures of the sole of the foot, which had become completely degenerated in character, scarcely any of the natural tissues, excepting, perhaps,

one or two small muscles, being recognizable. The lad, however, is doing very well, and will make a good recovery.

A case, in some respects similar to this, was in the same hospital a few weeks back, under Mr. Stanley's care, of a young woman, who has a pulsating tumour in the sole of her foot; it was diagnosed a pulsating tumour, but turned out to be a neuroma of the internal planter nerve underneath the planter artery.

These cases are of great interest, especially from the difficulty in arriving at a correct diagnosis before operative proceedings.—*Lancet*, June 26, 1858.

Respect your own Profession.

Respect your own profession! If Sir Astley Cooper was ever called to let off the impure ichor from the bloated limbs of George the Fourth, it was the king that was honored by the visit, and not the surgeon. If you do not feel as you cross the millionaire's threshold that your art is nobler than his palace, the footman that lets you in is your fitting companion, and not his master. Respect your profession, and you will not chatter about your "patrons," thinking to gild yourselves by rubbing against wealth and splendor. Be a little proud—it will not hurt you; and remember that it depends on how the profession bears itself, whether its members are the peers of the highest, or the barely tolerated operatives of society, like those Egyptian dissectors, hired to use their ignoble implements, and then chased from the houses where they had exercised their craft, followed by curses and vollies and stones. The father of your art treated with a monarch as his equal. But the barber surgeon's hall is still standing in London. You may hold yourselves fit for the palaces of princes, or you may creep back to the hall of the barber surgeons, just as you like. Richard Wiseman, who believed that a rotten old king with the corona Veneris encircling his forhead with its copper diadem, could cure scrofula by laying his finger on its subject—Richard Wiseman, one of the lights of the profession in his time, spoke about giving his patients over to his "servants" to be dressed after an operation. We do not count the young physician or the medical student as of menial condition, though in the noble humility of science to which all things are clean, or of that "entire affection" which, as Spinser tells us, "hateth nicer hands," they stoop to offices which the white-gloved waiter would shrink from performing. It is not here, certainly, where John Brooks—not without urgent solicitation from lips which still retain their impassioned energy—was taken from his quiet country rides, to hold the helm of our imperial state; not here, where Joseph Warren left the bedside of his patients to fall on the smoking breastwork of yonder summit, dragging with him, as he

fell, the curtain that hung before the grandest drama ever acted on the stage of time—not here that the healer of men is to be looked down upon from any pedestal of power or opulence!

If you respect your profession as you ought, you will respect all honorable practitioners in this honored calling. And respecting them and yourselves, you will beware of all degrading jealousies, and despise every unfair art which may promise to raise you at the expense of a rival. How hard it is not to undervalue those who are hotly competing with us for the prizes of life! In every great crisis our instincts are apt suddenly to rise upon us, and in these exciting struggles we are liable to be seized by that passion which led the fiery race horse, in the height of a desperate contest, to catch his rival with his teeth as he passed, and hold him back from the goal by which a few strides would have borne him. But, for the condemnation of this sin, I must turn you over to the tenth commandment, which, in its last general clause, unquestionably contains this special rule for physicians—Thou shalt not covet thy neighbor's patients.

You can hardly cultivate any sturdy root of virtue, but it will bear the leaves and flowers of some natural grace or other. If you are always fair to your professional brethren, you will almost of necessity encourage those habits of courtesy in your intercourse with them which are the breathing organs and the blossoms of the virtue from which they spring.—*Valedictory, by Oliver Wendell Holmes, M. D., from Boston Med. & Surg. Journal.*

M. Chaveau on Vascular Murmurs.

Session 3d May.—M. A. Chaveau presented to the Academy an abstract of a memoir entitled "Mechanism and General Theory of Vascular Murmurs, deduced from experiments;" of which the following are the principal conclusions:

"Vascular murmurs are purely physical phenomena, that is to say sounds, subject to the ordinary laws of acoustics. Presenting the same essential phenomena, notwitstanding numerous shades of difference, they can justly be attributed to but one essential cause, and that of a mechanical nature.

"That cause does not depend directly upon the quality or quantity of blood circulating in the vessels, and consequently, not upon the tension or relaxation of the vascular parieties. Moreover, it does not reside in the asperities of the internal surface, when not connected with a modification of the calibre of the vessels.

"When a dilitation exists in the calibre of a vessel, a murmur may be produced when the blood arrives at the dilated part.

"A contraction, more or less extensive, in the course of a vessel, may also be accompanied with a vascular murmur, but this murmur

is not produced either by the passage of the blood into, nor through, the contracted part of the vessel. It is only on the passage of the blood from the contracted portion to the part beyond it that the murmur occurs, and as this part of the vessel, in a normal condition, is regularly dilated, it follows that an essential condition of its production is the passage of the blood into a dilated portion of the vascular system.

"Two conditions are necessary to their production, viz., 1st, That the difference between the contracted and dilated portions of the vessel, whether this be absolute or merely relative, should be quite decided; 2d. That the transit of the blood through these parts should take place with considerable force.

"As in the case of all other sounds, molecular vibrations must be regarded as the immediate cause of these vascular murmurs. But, how and whence do these vibrations arise? Observation proves that when blood passes with considerable force from a contracted to a relatively dilated part, it produces a central current through the blood contained in the dilated portion. Now, we know, since the beautiful researches of Savart, that every current of fluid produces vibrations that may be sufficient to produce a sound, and also agitate the orifice whence the current flows. In these cases, the vibrations of the intravascular current and the orifice of flow are clearly perceived by the finger, either in the interior of the dilitation or on its surface. These vibrations give rise to the phenomenon known as the arterial thrill, which is so intimately allied to vascular murmur that they may be said not to exist independently of each other. Like the murmur also, the maximum intensity of the thrill is perceived in the course of the current in the dilated part. It is propagated in all directions, but with characters too variable, in particular cases, to admit of discussion in an essay devoted to the consideration of general doctrines alone."

Bending and Partial Fractures of Long Bones in Young Subjects.

Some nine months since, Prof. Hamilton published in the *N. Y. Journal* a paper on the above subject. His observations were founded upon experiments made upon the legs of chickens, and references also to cases in surgical practice. His experiments showed that the long bones of chickens may be bent to an angle of 25°, and immediately regain the straight form, dissection showing no lesion in the bone. *Inference*: The same may also occur in the bones of infants.

In practice, Dr. H. has seen fracture of one of the bones of the forearm and bending of the other.

Of partial fractures, Dr. H. remarks that he has observed seven-

teen of the clavicle, and thirteen of the radius or ulna. Of the seventeen cases of the clavicle, four only were attended by immediate spontaneous restoration of form. No examples of this latter peculiarity occurred among the partial fractures of radius or ulna.

It is now about a year since we observed an example of bending of both radius and ulna. The bones were abruptly bent at an angle of 30° from a right line. We saw the case within ten minutes from the occurrence of the accident. There was perfect freedom from swelling, so that a minute inspection of the bones was had. Smoothness of outline, immobility, and consequent absence of crepitus characterized the case. The bones, however, fractured with an audible snap, on an attempt to restore them to the straight form.

We think that in all cases we should prefer to incur the risk of fracture, rather than trust to the spontaneous gradual restoration of form, which generally follows in a greater or less degree. In the dissection made by Dr. H. a few days subsequent to the fracture, he found an ensheathing callus partially surrounding the bone, but absent upon the side where the solution of structure was effected.

Simple Tests for some Important Medicinal Preparations. By Edward R. Squibb, M. D.

There is no branch of commerce wherein the competition of trade is more rapidly and more certainly tending to deteriorate and debase the quality of manufactured products than that which deals in medicinal substances; and there is none where the interests of the consumer are more remotely considered in manufacturing, or where these interests are so difficult to guard and protect; whilst there is assuredly no branch whose operations and productions are of more vital importance to the community and the profession of medicine.

An important collateral effect of this debasement of medicinal substances, which does not receive due consideration in the profession generally, is that the effects of the uncertainty and bad quality of these substances are transmitted directly to the practice of medicine, and in failing to fulfill the indications to their use they not only bring distrust and discredit upon both the science and art of medicine, but also tend directly to foster and uphold the quackeries and nostrums of the day, in many ways. For instance, a physician prescribes the compound cathartic pills of the pharmacopœia. They either act drastically, inadequately, or they do not act at all. The patient says the doctor does not understand his business, and the next time buys "Brandreth's Pills," or some other nostrum, and is better satisfied with the result. The circumstance that the compound cathartic pills were made from bad and deficient materials, and through competition in trade were unduly active from the addition of some cheap drastic, or inert from consisting mainly of starch and

gum, whilst the extracts from which the nostrum was made had been much more carefully prepared—is quite overlooked by both practitioner and patient, to the lasting injury of the interests of both. It is, however, a fact that a large proportion of the compound extract of colocynth sold is manufactured from materials so cheap and so bad that it is rarely quoted in prices current at much above half the price of the crude materials from which it should be made; while the writer has known of several hundred pounds having been made and sold within one year at a price below one-third of that which the good materials directed by the pharmacopœia would have cost.

Another fertile source of bad and imperfect medicinal substances lies in the use, in manufacturing, of cheap substitutes and by-products, and in utilizing residues for improper purposes, so that through many ways the tendency is constantly increasing whereby the science of medicine is subsidized and radically injured by the debasement of the agents upon which the success of the art of medicine so much depends.

The check or remedy for this evil tendency rests entirely and only with the profession, and may be found in various ways, but in no way more easily or more certainly, for such substances as admit of it, than in the application of simple and reliable tests.

The writer having for some years past been engaged in manufacturing preparations of known character, for the navy, by the United States officinal standard, has had the opportunity of observing their properties pretty closely, and has collated and originated a few simple and easy tests of quality, which it is the object of this paper to communicate to the profession. These tests require little time, skill, or apparatus, and are adapted to the extemporaneous use of the physician or apothecary, so that they may be conveniently applied at the dispensary counter or upon the office table. They consequently do not aim at critical accuracy, but at the more important point of practical discrimination.

A very important general indication of quality in medicinal substances is the source from whence they come, and the channels through which they may have passed. The profession should obtain a better and more critical knowledge of the various manufactures, that due weight might be given to the names associated with the preparations they use, and should then be more careful to observe that the authenticated label of the manufacturer is affixed. In the common desire to be considered as manufacturers, and from the indisposition to circulate or publish others' cards or names in connection with preparations sold, it is becoming quite rare to find the name of the real manufacturer upon the packages of medicinal preparations. They are commonly sold without evidence of their source, and therefore without any real responsibility upon any one. The traditional or reputed character with which they commonly pass through the various hands to the profession is too often without other foundation than the disposition to buy cheaply and sell at large profit. From the circumstances that few apothecaries manufacture even their more simple preparations, and that there can be no proper

responsibility in a verbal character transmitted through several persons, the professions both of medicine and pharmacy should be more careful that their packages are duly authenticated from the desired sources, as general tests or evidences of quality. A very large proportion of medicinal substances must depend mainly upon some such evidences of quality until their therapeutic value is determined in practice, since they are beyond the easy reach of chemistry, and since sensible properties are so often deceptive. Among those which are susceptible of easy practical discrimination by simple means, the writer is at present able to offer the following:

Ether.—A strip of unsized paper, or a clean glass rod, dipped into the ether and allowed to dry for a moment or two, will by the odor it gives afford evidence of the less volatile impurities that it commonly contains. There usually remains a somewhat aromatic slightly-pungent odor, that is not hurtful in the more dilute ether used for common medicinal purposes, but the disagreeable oily odor often found is more objectionable, whilst really good ether should leave no odor whatever. The ether used for inhalation should leave upon the sponge, paper, or rod, no foreign odor at all.

The strength of ether is less easily ascertained except by a specific gravity instrument. With a little practice, however, with some good specimen for comparison, a very satisfactory estimate may be found by observing the slowness or rapidity with which any given specimen evaporates from the palm of the hand. Ether for inhalation should give off bubbles of vapor rapidly at the temperature of the palm of the hand. A thin test tube, containing the specimen, should be grasped firmly for a minute or two, and then the ether should be stirred at the time of observation. The bubbles arise from the points of contact between the tube and stirrer.

Compound Spirit of Ether—Hoffman's Anodyne.—Two drops of officinal spirit stirred into a pint of water give to the mixture a distinct oily surface, and the peculiar fruity, aromatic odor of the heavy oil of wine free from the odor of ether and alcohol. Sixty drops in the pint renders the water decidedly turbid. While, with four fluid drachms to the pint, a scanty precipitate of minute oil globules occurs after a few minutes' standing. The fruity, apple-like odor is characteristic of the chief anodyne ingredient, the oil of wine, and is entirely wanting in the ordinary commercial article. Without the oil of wine the preparation is a stimulant antispasmodic. With the oil it is a highly valuable anodyne antispasmodic, particularly adapted to nervous irritation and hysteria. The liquid universally sold as Hoffman's anodyne is a residue of the ether-making process, containing varying proportions of ether and alcohol with a little etherole or light oil of wine, but in no single instance of the many examinations made by the writer has any true heavy oil of wine been found in it. Heavy oil of wine, from being expensive and somewhat difficult to make, has finally been entirely omitted from the preparation, and is now hardly to be met with in commerce. While, as a consequence, the preparation to which it belongs, from a failure to meet

the proper indications to its use, is become a stimulant, and slowly going out of use.

Spirit of Nitric Ether.—Two or three fluid drachms of good sweet spirit of nitre that is not more than seven or eight months old, and kept in the usual way, contained in an ordinary test tube, and plunged into water that has been previously heated to 164°, will boil pretty actively. While, if freshly made, or not more than two months old, or if well preserved from light and air, no matter what the age, it will boil actively when surrounded with water at a temperature of 156°. From the fact that this among other liquids may be heated far above its boiling point without ebullition, it becomes necessary to drop a few small fragments of broken glass into the test tube with the spirit after the latter has been heated and while still held in the water. Another precaution necessary in the application of this test, is to discriminate between the mere formation of small gas bubbles around the fragments of glass, and a true ebullition. For whilst the former will occur as a fine effervescence, at any temperature above 140° in any spirit of nitre that contains hyponitrous ether at all, true ebullition, in which the vapor bubbles are much larger and in which they reach the surface and form, by their succession, a bead around the edge of the liquid, only occurs at the boiling points named. The preparation should not be quite colorless, but of a pale straw tint, and should effervesce very slightly upon the addition of carbonate of ammonia. When slightly acid, carbonate of ammonia is the best corregent, because the salts formed are therapeutically similar. The officinal preparation is a solution of five per cent. of hyponitrous ether in alcohol. The ether is the medicinal agent, and the alcohol is necessary for its preservation and dilution only, the latter indeed being often contra-indicated, as in some febrile conditions, where the former would be useful. In commerce, however, it is rare to find the proportion of the hyponitrous ether exceed three per cent. While in a great majority of cases it is below two per cent., and often in a proportion too small to be detected except by the odor. One of the largest manufacturers in the United States makes it of five different qualities to suit the market, and all these below the officinal standard. Another maker (and the two produce a very large proportion of all that is sold in the United States,) sells but one kind, and that, though of varying strength, is commonly below two per cent. The above test alone will reject all such specimens. It thus happens that the physician who prescribes this preparation in view of its supposed diuretic and diaphoretic effects is disappointed, and obtains instead the, to some degree, opposite effect of so much alcohol. Hence this preparation also is gradually falling into disfavor and disuse. In view of the circumstances mentioned in connection with these preparations, and the like tendency in many others, it is well worth while for the profession to consider how far it is willing to sacrifice its valuable curative agents to the cupidity of manufacturers. For detailed examination of specimens of sweet spirits of nitre, Hoff-

man's anodyne, etc., etc., see American Journal of Pharmacy, vol. xxviii. p. 302 *et seq.*; vol. xxix. p. 202 *et seq.*

Chloroform.—When equal volumes of chloroform and colorless concentrated sulphuric acid (the strong commercial oil of vitriol answers very well) are shaken together in a glass stoppered vial there should be no color imparted to either liquid, or but a faint tinge of color, after twelve hours' standing together. Nor should there be any heat developed in the mixture at the time of shaking it first. Any particles of dust, or cork, or other organic matter that may have been in the vial used, or in the chloroform, will, by reaction of the acid, produce a tinge of color in the acid or its separation from the chloroform, corresponding to the quantity of such particles present, and therefore in the application of the test care must be taken to avoid any such particles. Or if the acid be only faintly tinged at the end of twelve hours' contact with the chloroform, it may be attributed to some such collateral accidental cause. But if at the end of twelve hours, or sooner, the acid becomes yellow, or brown, or any darker color, it should be unhesitatingly rejected. If the mixture of acid and chloroform should become warm on shaking first, an admixture of alcohol would be indicated. One or two fluid drachms of chloroform spontaneously evaporated from a clean surface of glass or porcelain, or from a piece of clean unsized paper, should leave no odor after it. Commercial chloroform generally will turn the acid brown within two or three hours, and will often render it black and tarry-looking within two or three days; whilst with chemically pure chloroform there is absolutely no reaction within many days.

Calomel.—The most common and injurious contamination of calomel is corrosive sublimate, whereby its otherwise mild action is rendered irritant. This impurity is easily detected by shaking a drachm or two of calomel in a test tube with distilled water, and, when the water shall have become clear, adding a drop or two of liquor ammonia. If corrosive sublimate be present the ammonia will precipitate it and render the water cloudy.

Iodide of Mercury—is often irritant and harsh in its action through contamination with biniodide from faulty preparation. The writer has seen its use abandoned upon the ground of idiosyncrasy, when on examination it was easily shown to contain a notable proportion of the irritant harsh red iodide. The red iodide may be easily detected in it by rubbing a little of the suspected iodide in a mortar with strong alcohol, and then allowing it a few moments to dry. The evaporation of the alcohol leaves the red iodide along the pestle marks as a border to the iodide. A minute contamination becomes very easily seen in this way.

Mercury with Chalk—is of late very commonly found to be harsh and irritant in its action, producing or increasing intestinal irritation to such an extent that many practitioners have abandoned its use, while others are puzzled by its effects.

This also is a result of faulty preparation, wherein through time and labor-saving expedients, or bad appliances, a portion of the

mercury becomes oxydized instead of being simply comminuted or divided. However well prepared, it almost always contains a very small proportion of suboxide, but this being one of the mild preparations of mercury, never produces the bad effects alluded to. To detect the peroxide, or irritating property, a drachm or two of the mixture is treated with an excess of acetic acid, and the solution filtered off clear. A few drops of hydrochloric acid is then added to the clear solution. If the preparation be good, this will produce only a slight precipitation of insoluble subchloride from the small quantity of acetate of suboxide formed. If the preparation be old, or badly kept, having had free access of light and air, a pretty copious precipitate will be formed by the hydrochloric acid. The clear solution is again filtered or decanted off this precipitate, and liquor ammonia added to it. If the preparation was contaminated with any peroxide it will now be precipitated by the ammonia as white precipitate. (See American Journal of Pharmacy, vol. xxix. p. 388.)

Blue Pill—is also liable to contain oxydes of mercury, and thus to lose its mild character and operation through faulty preparation. In this the oxydes are detected in precisely the same way as in the case of mercury with chalk.

Iodide of Potassium—is occasionally contaminated with carbonate of potassa to the extent of impairing its medicinal effect. This is easily detected by adding lime water to the solution of the iodide, when carbonate of lime will be precipitated and render the mixture cloudy.

Bitartrate of Potassa—frequently contains much tartrate of lime. This may be detected by stirring a few drops of liquor ammonia into a mixture of a few grains of the specimen in two or three drachms of cold water. The ammonia renders the otherwise insoluble potassa salt quite soluble, whilst it has no immediate effect on the tartrate of lime. If then a portion remains undissolved after the application of the test, it may be regarded as an impurity.

It is hoped that the simplicity of these tests for a few important substances may not only lead to their frequent adoption, but that the opening of the subject may stimulate others to search for and publish better tests, and to extend the list of substances that may be easily and simply tested.—*N. Y. Med. Jour.*

The Diseases of Quinine Makers.—M. A. Chevallier, at the last sitting of the Academy of Sciences of Paris, communicated a paper on the diseases to which workmen employed in the manufacture of sulphate of quinine are subject. It appears from his statement that one of the disorders is a cutaneous affection severe enough to force them to suspend work for a fortnight, a month, or sometimes altogether. M. Chevallier further quotes M. Zimmer of Frankfort to testify to a particular kind of fever-bark fever (das China Fieber)

which affects workmen engaged in pounding bark. This has not yet been observed in France. It is described as being so painful that those who have once suffered throw up employment rather than risk a second attack. As for the cutaneous affection, it attacks not only workmen, but those about the place, and affects alike the sober and the intemperate. No remedy has as yet been discovered.—*Lancet.*

Painless Caustic.—M. Picdagnel, after various trials, has succeeded in producing a caustic that may be employed, causing little or no pain. It is formed of three parts of the Vienna caustic in powder and one part of hydrochlorate of morphia, intimately mixed together, and then made into a thick paste by means of chloroform, alcohol, or water. It is applied to the skin on diachylon. A black eschar is produced in fifteen minutes, increasing in thickness with the duration of the application. The morphia mixed in the same proportions with powdered cantharides, prevents pain during the rising of a blister. M. Picdagnel, who at present has only used this means for the production of issues and blisters, states that the action of the morphia is merely local.—*Gaz. de Hop.*

Dr. A. Mercer Adam has commenced in the Edinburgh Medical Journal some sketches of universities, hospitals, lunatic asylums and mineral baths of Holland, Belgium, Germany and Austria. We extract from the last paper his sketch of Prof. Vrolik, of Amsterdam, and of the University of Utrecht and its distinguished professor, Shroeder Van der Kolk.

"The medical 'lion' of Amsterdam is undoubtedly Prof. Vrolik, the celebrated anatomist and physiologist. Of course I speak of Vrolik the younger; for, though his father still lives, and is in vigorous health, he may now be said rather to belong to history than to be one of the 'Men of the Time.' Accordingly I went to present my letters of introduction to this gentleman, who received me with that frank courtesy, of which my professional brethren in England must entertain pleasing recollections. Vrolik is a tall, heavily built man, with an open expression of countenance, and very fine dark eyes—possessed of more vivacity than is usual among the Dutch. I spent a very pleasant afternoon in his society, and inspected, along with him, all the valuable private collection of anatomical and zoological specimens which has been accumulated during the joint life-times of his father and himself. This museum is very rich in osteology. The collection of skulls is larger than that of Professor Vander Hoven, of Leyden, and contains magnificent specimens of all the ethnological varieties. Among them is a curious microcephalous skull, which, in several places, is atrophied by the pressure of the

cerebrum. A large cabinet is completely filled with illustrations of anchylosis of every joint in the body; and among them are two interesting preparations of perfect osseous union of the symphisis pubis, one of which occurred in a healthy elderly woman, while the other was the result of traumatic inflammation of that part. Another cabinet, equally large and complete, is devoted to specimens of dislocations; among which are some curious preparations of congenital luxation of the femur, showing the increased transverse diameter of the pelvis, resulting chiefly from the strong action of the iliacus internus muscle in this affection. His collection of pelves is extensive, and well selected, containing some interesting preparations showing the various abnormities and deformities. Among them is a pelvis of enormous size and weight, the largest and heaviest I ever saw, which belonged to an Ethiopian female. But it is especially in preparations illustrative of teratology that Professor Vrolik's museum excels all others that I am acquainted with; for, having devoted a life-time of careful attention to the study of malformations, he has accumulated a good collection, and he is at present the highest living authority on the subject. Such men as he and our countryman, Allen Thomson, of Glasgow, have followed well in the footsteps of Geoffroy Saint Hilaire, and have elevated to the dignity of a science what was formerly a mass of superstitious uncertainty and absurd speculation. A very interesting malformation has just recently been added by Vrolik to his collection, viz., of the variety *Pyrocephalus Syreniformis*, which Vrolik considers quite unique. This seems externally merely a dolphin-like mass of flesh, or rudimentary fœtus with undeveloped fin-like extremities; yet, upon dissection, Vrolik found that it contained a perfectly organized skeleton and viscera. The brain was found to be very large; it was proportionally more developed than any other part, and the larynx ended curiously in a *cul-de-sac*. Another new preparation of great interest is a fœtus, which was born with congenital umbilical hernia, and also a preternatural anus. Instead of being in the usual place, the rectum terminated anteriorly, at the site of the rupture, in two months, thus forming a double anus. The collection of double monstrosities is very complete, and the dissections of the xyphophage variety (where the fœtuses are united at the sternum) show that successful disunion by operation is rendered impossible by the fact of their livers being united. In physiology there are also many interesting preparations, especially those which illustrate the recent discovery made conjointly by Van der Kolk and Vrolik, of the existence of reticulated venous pexuses surrounding the arteries in the wings of fowls, especially in those which possess great strength of pinion—a provision doubtless designed to facilitate the circulation of the venous blood at times when the veins become forcibly compressed by the strong action of the surrounding muscles. The preparations showing these venous plexuses in the wings of swans and eagles, are very successful and beautiful injections. I did not see the elder Vrolik, as he was from home, nor had I sufficient time to see any of the other medical men of the city, as I was anxious to

pass on without delay to the more important medical school of Utrecht.

"As a school of medicine, Utrecht unquestionably stands highest among the Dutch Universities, and the celebrity of several of its living professors has attracted to it much of the attention of the scientific world. The names of Schroeder Van der Kolk, Donders, Harting, and Mulder are very familiar to every student of modern medicine, and the influence of their views have extended to all lands.

"The University of Utrecht is a plain building, which was founded in 1636. It contains a fine hall, which, at the time of my visit, was in daily use for medical and other graduations. At one end of it is a gallery wherein musicians perform during the ceremonies of the graduations, which is gaily bedecked with flags, swords, spears, and drums—trophies of the gallant part which was played by the alumni of this college, during the struggle for independence, at the time when Holland was separated from Belgium in 1830, when the students of Utrecht, and of the other Dutch Universities, patriotically enrolled themselves in corps, and fought most valiantly for the defense of their country. Other banners, bearing the arms of Dutch cities, &c., adorn the walls; and high above them all flames the emblem of the University itself, a burning sun, with the motto, 'Sol Justitiæ illustra nos.' There are 400 students, of whom 70 are medical. Each medical class costs about £2 10s. for the session, and the professors, in addition to these fees, receive about £250 each per annum from the Dutch government. In connection with the University there is a very good anatomical museum, chiefly remarkable for possessing a large collection of well executed wax models. The physiological laboratory of Professor Donders is also in the University. It is fitted up with microscopes and other scientific apparatus; among these I observed the most interesting instrument called the Ophthalmotrope of Ruete, which attracted very much notice when it was exhibited last year at the Ophtalmic Congress at Bonn. It consists of a model of the eye, capable of moving exactly as the natural organ, and having delicately arranged silken cords attached to it behind, which act as the muscles of the ball. By means of a graduated scale, and some highly ingenious mechanism, one can see at once, by the lengthening or shortening of each cord, what muscles act in producing every movement of the eye, and to what extent comparatively each of them operates in these processes. The saloons containing Professor Harting's admirable microscopical collection immediately adjoin Donders' laboratory. In another part of the town, Mulder, the Professor of Chemistry, has a splendid laboratory, which was expressly built for him.

"Few living physiologists have a wider spread reputation than Schroeder Van der Kolk, the Professor of Anatomy in Utrecht. Though now an elderly man, he still retains all the enthusiasm of youth for the prosecution of physiological science; and when he is talking of his experiments or speculations, he warms with the subject, his manner becomes very energetic, and his face brightens up

see any of the other medical men of the city, as I was anxious to

into a pleasant smile. In appearance, he is a man of about 60 or 65 years of age—of middle size, with iron gray hair, and a slight stoop, from long study and bending over microscopes. I spent a very pleasant forenoon with him, seeing all his pathological, physiological preparations, about which he discoursed to me most enthusiastically in German. He showed me some finely injected preparations, to illustrate his theory of the non-existence of veins and nerves in the centre of carcinomatous growths, the injection being seen to traverse only the arterial vessels in a section of such a tumor. The pain attending the disease is attributable, he thinks, to the cancer cells entering and destroying the substance of the nerves in the surrounding tissues. We talked a good deal of the celebrated discussion about cancer, which occurred two years ago in the Academy of Medicine of Paris, and he remarked that whatever may be said to the contrary, the microscopical diagnosis of cancer is not to be sneered at as an impossibility. He thinks, however, that in making a histological diagnosis of carcinoma, we should look for the cancer cells in the tissues immediately adjoining as well as in the suspected growth itself. Of Professor Hughes Bennett's 'Researches into Cancer,' he spoke in terms of unqualified commendation; and, in common with all the continental physicians with whom I have conversed, he entertains the highest admiration of the efforts that have been made by Dr. Bennett to establish in England an improved system of medicine, founded on a scientific rational basis, and in which it is sought to reconcile correct diagnosis and successful treatment with the most advanced views of modern physiology and pathology. And all honor, say I, to such men as Van der Kolk, Donders, Kolliker, Virchow, Claude Bernard, Hughes Bennett, and others, for the impetus they have given to the culture of rational medicine. Although we may be unable, as yet, to deduce from *all* their investigations, theories of disease or modes of treatment superior to those which we at present possess, still there cannot exist a doubt that, eventually, all scientific medicine must be established on a rational basis of improved systems of physiology and pathology.

"I have said that Van der Kolk, in his mellow age, has the pleasure of knowing that ere he dies his merits are acknowledged, and his fame European. It is Professor Donders, however, who is now the man of most hope and promise in Utrecht, and to whom, consequently, most of public attention is directed. Like Simpson, Scanzoni, and many other eminent men, he has earned a wide reputation, while yet comparatively young; and his skill as an oculist attracts thousands of patients yearly, to be under his care. Professor Donders is about 40 years old, rather tall, well built, and of very dark complexion; he has a quick piercing black eye, which seems at once to get at the root of a matter, and he has a frank manner and a winning smile, which irresistibly inspire complete confidence in his skill. He has given an immense stimulus to physiology by his unwearied labors; and his great enthusiasm and his invariable courtesy have rendered him a great favorite with the Utrecht students. The medical literature of Holland is under deep obligations to him;

ject, his manner becomes very energetic, and his face brightens up

for he was not only one of the principal supports of the *Nederlandsch Lancet*, during the existence of that periodical, but since its decease he and an Amsterdam physician have commenced a new medical periodical, in which henceforth the contributions of the Dutch medical men will be published in German instead of Dutch, as being a more generally understood language."

In Haarlem I observed, in one or two streets, a curious Dutch custom peculiar to the town, which may be interesting to accouchers. When a birth takes place here a handsome pin-cushion, profusely ornamented with lace, is affixed to the outside of the street door of the house, to notify the occurrence of the event to the public. If a boy has been born the pin-cushion is of a red, and if a girl it is of a white color. A flag of truce is not more respected than this little ensign of millinary work, for as long as it hangs on the door the house is held sacred, and is protected from the approach of duns, bailiffs, or tiresome acquaintances; and even troops, in marching past, must cease beating the drums or blowing their bugles, lest "mother and child" should be hindered from doing well. It is also a common custom throughout Holland, in case of sickness, to append a daily bulletin of the patient's progress, signed by the doctor, to the outside of the street door, so that inquiring friends may read the intelligence without occasioning annoyance to the patient by ringing or knocking.—*American Monthly.—Edinburg Medical Journal.*

The following statistics in relation to *The Poor in Paris*, are taken from a daily paper:

The administration publishes every year a report of its proceedings. We extract the following from that for 1857: "Paris possesses 16 hospitals for the treatment of diseases, and 12 hospices or places of refuge for the incurable, or for aged paupers. The support of these different establishments requires great resources, and the account for 1857 gives the ordinary receipts at 16,427,117f., and the expenses at 16,132,114f. The ordinary receipts are as follows: Landed property and revenues, 970,928f.; interest of capital, 700,065f.; rents and dividends, 1,417,802f.; eventual revenues, 213,214f.; concession of ground in the cemeteries, 162,181f.; duties on theatres, &c., 1,389,240f.; bonus from Mont de Piete, 259,-157f.; reimbursements by families and communes, 3,561,121f.; municipal subvention, 7,207,137f.; revenues and foundations, 546,249f. Total, 16,427,117f.

On the Influence of Sewer Emanations. By Dr. HERBERT BARKER.

(*Sanitary Review*, April, 1858.)

Dr. Herbert Barker has lately been making some inquiries as to the influence on the health of animals, of exposure for a long time to air rendered impure by the diffusion through it of emanations from sewers. The full details of these experiments are recorded in the essay "On Malaria," written for the Fothergillian Prize of the Medical Society of London for 1858; but, as the subject has important sanitary bearings, Dr. Barker has published in the "Sanitary Review" an outline of his researches.

The gaseous emanations from sewers have been subjected, to a certain extent, to chemical analysis. There have been thus detected in them sulphuretted hydrogen gas, sulphide of ammonium, carbonic acid, nitrogen, sometimes sulphuretted hydrogen, and various organic living products. Dr. Olding has recently pointed out the diffusion of an alkaline gas through sewer air.

For the purpose of experiment, Dr. Barker selected a large cesspool, which received, together with the animal excreta, the liquid refuse of an inhabited house. The cesspool was full, and had at all times so bad a smell, that during hot weather the vicinity was scarcely tolerable. The inhabitants of the house, however, had not for many years suffered from any epidemic; nor did the near presence of the sewer seem to affect their general health.

Dr. Barker had built, close by and nearly over the sewer, a small room. Two gutta-percha tubes, one inch in diameter, were carried down into the cesspool through its upper wall, and terminated in two large inverted funnels a few inches above the surface of the sewage matter. The other ends of the gutta-percha tubes were in the small room, and were so constructed that they could be opened or closed at pleasure. By a bellows attached to the free end of one or other of the tubes, he was enabled at any time to draw off the sewer air and subject it to examination. He did this on numerous occasions—at times when the weather was very hot and the neighborhood of the sewer most offensive—at times when the temperature was very low and the place inodorous. As a general rule, the sewer gas yielded neither acid nor alkaline reaction, but sometimes the reaction was alkaline. At all times, mixed with the common air, carbonic acid gas, sulphuretted hydrogen, or sulphide of ammonium, were detectable. When the reaction was alkaline, ammonia was evidenced. He could detect no other foreign products in the sewer air. He tested for evidence of cyanogen compounds, without any affirmative indication.

When this inquiry had progressed for several weeks, he tried the influence of sewer air on animals exposed to it for a long time. For this purpose, he had made a chamber of wood and glass, with a cubic measurement of 5832 cubic inches. One of the gutta-percha tubes was introduced into it at the lower part; from the upper part

he carried a tube in the form of a small chimney. At the point where the long tube piping from the chamber made a right angle upwards, it expanded into a conical box, in which a lamp was placed, so as to create when alight a constant upward draught. The whole played well. When the chamber was closed and the lamp arranged, a current of the sewer air was kept steadily passing through it. Dr. Barker also attached a pair of bellows to the chamber, in such a way that he could at any time remove the air by working them, and subject it to investigation, without interfering either with the experiment which might be progressing. In the experiments to be related, the animals operated on were placed in the chamber, were fed by a funnel whenever necessary, and were subjected to the sewer gases as is now to be described.

Experiment 1.—Dr. Barker placed a young dog in the box at twelve o'clock noon, and kept a current of the cesspool air passing constantly through the chamber by means of the chimney draught. Half an hour after the exposure, he became very uneasy and restless; he vomited, and had a distinct rigor. In the course of the day he suffered from diarrhœa and tenesmus. After twelve hours' exposure, he was allowed fresh air; but on the next day, when he was removed altogether, he was exhausted. The diarrhœa and vomiting had ceased, but he refused food for some hours. However, he soon recovered.

The air breathed in the chamber by this animal yielded evidence of sulphuretted hydrogen.

Experiment 2.—On placing another dog in the box connected with the cesspool, and subjecting him to a free current of the foul air, similar results occurred. In ten minutes the creature became very uneasy, and soon afterwards suffered from vomiting and diarrhœa. After these effects, however, he suffered but very little, although kept in the chamber for five hours. After removal he quickly recovered.

Experiment 3.—A mouse placed in a cage was let down into the cesspool, to within three inches of the surface of the contained soil. The cesspool was freely open above, so that there was no exclusion of air. The animal was also well plied with food. After this exposure for four days, the animal seemed lively and well, and took his food heartily. On the next day he was found dead.

Experiment 4.—Another dog was subjected to the cesspool air during a period of twelve days, with such brief intermissions only as sufficed for rapid cleansing of the box. Throughout the time food was liberally supplied him. The results were as follows:—

During the first day the animal was restless and uneasy, and refused food. On the second day vomiting came on, and was repeated frequently during the day. In the afternoon there was diarrhœa, accompanied by thirst and restlessness. On the third day, in the morning, he had marked shiverings, and refused all food. The feet were somewhat swollen. Towards evening he slept, but had a peculiar kind of tremor with each inspiration. On the fourth day he took food, and drank some milk. He slept during the fore-

noon, but was restless towards evening. On the fifth and sixth days he was much the same. On the seventh day he was restless and relaxed, and ate no food. On the eighth day he ate but little food, and was restless; he was by this time thinner and feeble. On the ninth day he had eaten no food for two days, and seemed very ill and miserable. He was therefore taken from the box while it was cleansed, and offered food, which he ate voraciously and to repletion. When removed from the box, his skin was preternaturally hot and dry; he was very weak, and his gait feeble. On the tenth day his appetite was better, but he vomited and had diarrhœa in the evening. On the eleventh day he was very restless, and had but little appetite; and on the twelfth, the symptoms being much the same, he was removed to his kennel. He walked feebly; but soon after his liberation ate heartily of food. He continued very thin and weak for six weeks after his removal from the cesspool air.

Having thus ascertained in some measure what was the effect of long exposure to the vitiated air of the cesspool, Dr. Barker subjected the animals in the same chamber to certain percentages of such of the individual gases as had been found at various times emanating from the cesspool.

Sulphuretted Hydrogen. Experiment 5.—Dr. Barker placed a puppy in the box, as before, and introduced 100 cubic inches of sulphuretted hydrogen, or 1,714 per cent. The breathing became instantly labored. In two minutes the animal fell insensible on his side, and in another half minute he was dead without a struggle.

An hour after death, the right side of the heart was found filled with fluid blood to distension. In the left side the blood was partly coagulated. The fluid blood coagulated quickly when received into a glass. The corpuscles of the blood were natural. The lungs were congested in the lower lobes and posteriorily. Above, they were pale and free from congestion. The stomach and abdominal viscera were healthy. The vessels on the surface of the brain were slightly congested.

Experiment 6.—Dr. Barker placed a puppy in the box as before, and drove in twenty-five cubic inches of sulphuretted hydrogen, or 0.428 per cent. In three minutes the animal fell on his side insensible. In this condition he lay for an hour without any indication of pain, but with catching respiration. At the end of an hour he ceased to breathe.

Directly after death the lungs were found generally pale, and were free from congestion. The right side of the heart was filled to distension with blood. The left side contained fluid blood. Blood coagulated in eight minutes after being removed from the body. It was dark in both cavities, and the corpuscles were irregular. They floated about freely between the slips, but not one was natural. Some were crenated at the edges, and thus shrunken and broken up. The stomach presented nothing unnatural. The vessels of the brain were congested.

Experiment 7.—At thirty-seven minutes past 4 P. M., a dog was placed in the box, and twelve cubic inches of sulphuretted hydro-

gen gas, or 0.205 per cent., were slowly introduced. Within a minute he fell on his side, and was seized with tremors. The action of the heart became irregular, and within four minutes the respiration had apparently ceased. This cessation of respiration continued for about two minutes, when he began to breathe heavily. The respiration next became very quick and catching. Afterwards the quick respiration came on in paroxysms, with an occasional long-drawn inspiration. In three-quarters of an hour from the commencement, the respirations were 112 per minute, rising sometimes to 120; they then became deeply stertorous, as in appoplexy. Dr. Barker removed this dog from the box at fifteen minutes past six, having exposed him to the gas one hour and thirty-eight minutes. The respirations were at this time stertorous, the limbs were rigid, and the head was drawn backwards. The respiration became gradually more feeble and catching, as if solely diaphragmatic, with a kind of hiccup. The body was universally cold. The respiration then became very peculiar, consisting of two short inspirations to one expiration; and at fifteen minutes past 2 A. M. the dog died, nine hours and thirty-eight minutes after the commencement of the experiment.

On examination twenty hours after death, there was moderate cadaveric rigidity. The brain was found slightly congested externally, but presented no bloody points. The lungs were collapsed, dark in patches, and congested. The heart was enormously distended, and was remarkable for being excessively loaded with separations of fibrin. The right auricle, pulmonary artery, and the left auricle, were literally distended with fibrinous concretions, to the almost entire exclusion of red blood. The right and left ventricles contained a large quantity of dark clotted blood, but there was some separations of fibrin in these cavities also. The fibrinous concretions in the right auricle and pulmonary artery were of pure whiteness. Those on the left side were red and striated, very closely resembling muscular fibre. The liver and spleen were congested. The kidneys were normal. The stomach, viewed externally, had a vascular appearance; but internally, the mucous surface was natural. There was no serous effusion into the abdominal cavity, nor any particular inflation of the alimentary canal with gaseous matters.

Experiment 8.—Another dog was put into the box, into which there were introduced twelve cubic inches of sulphuretted hydrogen, or 0.25 per cent. He suffered from violent tremors and shortness of breathing. When nearly an hour had elapsed, he appeared better, and was removed at the end of five hours, not laboring under any morbid symptom.

A jackdaw was placed in the chamber. Through the air of the box were diffused nine cubic inches of sulphuretted hydrogen, or 0.154 per cent. Within two minutes the bird essayed to vomit, and almost instantly afterwards was purged. He was incessantly restless, and the breathing was remarkably hurried and catching. After inhaling the gas for ten minutes, his movements became so feeble that it was with difficulty he stood. The pupils, at first con-

tracted, soon became widely dilated. The beak was set widely open; and the tongue, dry and dark at the top, was protruded at each inspiration. After remaining in this condition for an hour and a half, he was removed from the box, and soon recovered.

A dog was placed in the box at 8 A. M., and nine cubic inches of sulphuretted hydrogen, or 0.154 per cent., were introduced. Within two minutes the respiration became quickened, with reeling. For a quarter of an hour he was restless, and walked with difficulty. His movements were very like those resulting from intoxication. This effect gradually subsided; and he was taken out of the chamber in three hours, merely enfeebled.

Another dog was placed in the chamber. When he was composed to his new situation, six cubic inches of sulphuretted hydrogen, or 0.102 per cent., were introduced. At first there was watering of the eyes, followed by signs of thirst, muscular debility, and slight drowsiness. In half an hour the breathing had become hurried, and an hour later he suffered from violent diarrhœa; the breathing became more rapid, and the tremors more intense. Three hours after his first introduction the respiration was still hurried, and the heart beat so rapidly that it could not be counted with precision. He was now again purged. Removed from the chamber he soon recovered in the pure air.

Another jackdaw was put into the box as before, with six cubic inches of sulphuretted hydrogen, or 0.102 per cent. Within two minutes the bird commenced to vomit (a curious symptom to observe in birds), and he was also freely purged. The symptoms continued for twenty minutes; afterwards the respiration was very hurried. After keeping him in the box for two hours, without much further modification of symptoms, he was removed, and soon recovered.

Experiment 9.—A dog was introduced into the box as before, and three cubic inches of sulphuretted hydrogen, or 0.056 per cent, were driven in. He suffered almost at once from tremors of the muscles. The respiration was also quickened, and the heart-beat was extraordinarily rapid. At the same time he seemed sufficiently lively. After keeping him in the box for two hours, he was let out. The pulsations of the heart could be heard at a short distance from his body, the action was so intense. After removal, he was freely purged for a few hours, but eventually got quite well.

Sulphide of Ammonium.—This was diffused in vapor from its solution into the chamber in each experiment.

Experiment 10.—A large dog was placed in the box, and six drachms of sulphide of ammonium were introduced. He soon suffered from lachrymation, restlessness and vomiting. The vomited matters gave off copious white fumes. There was a peculiar harsh noise during expiration. In five hours he had recovered, and was then removed.

Experiment 11.—A dog was placed in the box, and half an ounce of sulphide of ammonium. For ten minutes he labored under excitement with lachrymation. He also had some tremor and tenes-

feeble that it was with difficulty he stood. The pupils, at first con-

mus. The symptoms subsided, and he was removed from the box in five hours.

Experiment 12.—A jackdaw was placed in the box, and half an ounce of sulphide of ammonium was introduced. The bird vomited, and the vomited matters were of a yellow color; the beak was separated; the tongue was dry and dark colored at the top. He was much purged, and the ejected matters were liquid. He expanded both his wings to support his body. The respiration became quicker, and he died in two hours.

After death the blood remained fluid; the lungs were congested; the brain was congested. The other viscera were healthy.

Experiment 13.—Dr. Barker placed a dog in the box with one ounce of sulphide of ammonium. He soon labored under profuse lachrymation and salivation, and became very restless. Within five minutes tenesmus showed itself. The respiration became hurried and difficult. He died within ten minutes.

Twenty-four hours after death the right auricle and ventricle were found filled with quite liquid blood. The left cavities contained a small quantity of fluid blood. The venæ cavæ were distended with fluid blood. Both lungs were deeply congested, and of a dark color. The vessels of the brain were congested. The stomach was distended with food and an offensive gas. It presented a reddened appearance of the mucous surfaces. The other viscera were of healthy appearance.

Carbonic Acid. Experiment 14.—A hedgehog was placed in the box, and 88 cubic inches (1½ per cent.) of carbonic acid were introduced. For a quarter of an hour he remained curled up; he then breathed more quickly—sometimes irregularly, and occasionally drew a long inspiration. Soon afterwards he was very restless—running about and trying to escape. He was also freely purged. He became quieter afterwards, and was removed in four hours and a half, upon which he recovered.

Dr. Barker made afterwards several experiments with carbonic acid gas, exposing the animals subjected to experiment to 5, 2½, and 1½ per cent. of that gas. The effects were mainly referable to impeded respiration, but in one instance diarrhœa was the result.

Remarks.—These experiments have brought before us the effects of the compound impure cesspool atmosphere: and they have shown the specific influence of certain particular gaseous poisons, which alone, or in company, emanate from the cesspool, and the decomposing vegetable heap, to pollute filthy localities.

1. In the first place it cannot be doubted that cesspool emanations are, when steadily inhaled, poisonous. The dogs subjected to the cesspool air were all more or less affected. The symptoms were those of intestinal derangement followed by prostration, heat of the surface of the body, distaste for food, and those general signs which mark the milder forms of continued fever common to the dirty and ill ventilated homes of the lower classes of men.

2. The peculiar poisonous action of sulphuretted hydrogen is well

illustrated in these experiments. The symptoms produced even by the same dose differed in degree in different animals of the same class, the one animal dying from the effects of a dose which was insufficient to do more in the other than produce dangerous symptoms.

The symptoms arising from sulphuretted hydrogon are well marked, and may be considered specific. Vomiting and diarrhœa are the first and most prominent symptoms. The latter is painful; the vomiting is difficult and exhausting, and eventually there is insensibility and entire prostration. When the dose of the poison is at first very large, the prostration and the insensibility are immediate.

The pathology following such poisoning is definite. If the death takes place quickly, the pathological evidence is the evidence of asphyxia; if the poison is long breathed in diluted doses, the pathology is modified, the fibrin of the blood is separated, and the heart is slowly clogged up with fibrinous depositions.

The dose of sulphuretted hydrogen required for the production of the specific symptoms is tolerably well shown. It is clear that so little as 0.428 per cent. is a dose absolutely and rapidly poisonous; that so little as 0.205 per cent. may be fatal; and lastly, that so minute a dose as 0.056 per cent. is sufficient to produce serious symptoms, eructations, tremors, rapid and irregular respiration, extraordinary rapidity of the pulse, and diarrhœa.

3. The effects of sulphide of ammonium, while they differ from those produced by sulphuretted hydrogen, are in themselves sufficiently distinct. Vomiting is a symptom of this poison, without purging, but occasionally with tenesmus. When the dose is very large, death occurs speedily, with quickened and labored respiration. When the administration is kept up in small doses for many hours, the symptoms are those of excited circulation and thirst, followed by rapid sinking. The surface of the body, from being unusually hot, becomes unusually cold. The tongue is protruded, dark, dry, and cold. There are constant jactitation of the limbs, subsultus tendinum, feeble, quick pulse, and ultimately death, which may occur even some hours after the animal has been removed from the poison and placed in the open air.

The pathology after death from sulphide of ammonium differs from that which follows the administration of sulphuretted hydrogen. When the exhalation is prolonged, and the death is gradual, the alimentary mucous surface is changed. The mucous coat is injected and softened in patches. The blood shows no fibrinous separations, but is dark, and either feebly coagulated or entirely fluid. The blood-corpuscles are also much dissolved and changed, and there is congestion of fluid blood in all the vascular organs.

The dose of sulphide of ammonium required for the production of serious symptoms is difficult to calculate; and this, from the fact that when the vapor of sulphide is diffused through a confined space, in which an animal is breathing, there is quickly a deposit on the floor of the chamber of the white bicarbonate of ammonia. This

deposition is so rapid, indeed, that the effect of the poison is very quickly lost, so that constant renewal is required, and the calculation of dose is necessarily rendered obscure, since the animal is not breathing the same dose for any two minutes together.

4. In poisoning by carbonic acid gas, the respiration suffers first; there is prostration, and, if the inhalation is prolonged, diarrhœa. The effects vary with the dose; the instances given above are the effects of a small, long-continued dose. In larger proportions, insensibility, coma, and asphyxia are the results.

The pathology varies. While congestion of the lungs is commonly noted as the leading pathological sign, it is clear that when the gas has been long inhaled in small quantities, this rule is not without its exception; for, in one case, the lungs were found of brilliant vermilion color, and free from congestion.

The effect of carbonic acid gas on the blood is definite; it does not produce the fibrin deposit like sulphuretted hydrogen, nor the complete fluidity of sulphide of ammonium. But there is feeble coagulation, and sometimes a dark color even in the arterial blood. If this gas be breathed continuously for a long time in a very minute dose, the brain suffers from congestion of blood, and the mucous membrane of the stomach is injected and reddened.

When the gas has been breathed for a long time in small quantities, so as not to produce insensibility, the effect does not pass off so speedily on placing the animal in the open air as is generally believed. In one experiment with carbonic acid, the animal, after being exposed for two hours to an atmosphere in which he breathed from the first two per cent. of carbonic acid, was left (not apparently suffering much) with pure air entering freely into his chamber. Yet he died after all.

The smallest dose of carbonic acid required to produce dangerous symptoms cannot be determined absolutely from the experiment of placing an animal in a closed chamber and introducing the gas, inasmuch as the gas is also streaming off from the animal itself. Dr. Barker thinks, however, that the inference is quite fair, that from one to two per cent. of this gas is sufficient, when long inhaled, to produce decided symptoms of imperfect oxidation of the blood, and all the after prostration incident to such interference with the primary act and principle of life.

The symptoms which have thus been noticed as resulting from the inhalation of sulphuretted hydrogen, sulphide of ammonium, and carbonic acid, are sufficient to account for the effects arising from cesspool effluvia, without seeking for any further product from such emanation. Comparing the experiments with cesspool air with those in which separate gases were employed, the inference seems clear, that the symptoms arising from the inhalation of the cesspool atmosphere were due mainly to the presence of a small amount of sulphuretted hydrogen, which gas was always present. If the experiments with the cesspool air be placed side by side with those in which sulphuretted hydrogen, in the proportion of 0 056 per cent., was administered by inhalation, the analogy between the two sets of results will be sufficiently unmistakable.

Therapeutic action of Mercury.—1. It is of use in inflammations, by decomposing the plastic elements of the blood.

2. It is of use in syphilis and other diseases, by eliminating bad matter from the system.

3. It is of use in some diseases, by increasing the natural secretions.

Prop. 1.—*Mercury is of use in inflammations, by decomposing the plastic elements of the blood.* Becquerel and Rodier have shown that in acute inflammations the proportion of fibrine in the blood is increased on the average to 5 8 in the 1000 parts, nearly double the amount of health. Mercury is *antiphlogistic;* it directly counteracts inflammation by diminishing the fibrine. By impoverishing the mass of blood, it weakens the heart, and thus it both counteracts effusion and assists absorption. It is slower in its effects, but more lasting in its action, than either blood-letting or antimony. Less adapted than the latter for sudden emergencies, because having no immediate but only an indirect power over the heart, it is better suited to cases where inflammatory effusion has already occurred. In the end, mercury diminishes the corpuscles and albumen, as well as the fibrine. It thus leaves weakness behind, and always does some harm as well as good. To use it, is like pointing a battery against a multitude in which our friends are mixed with our enemies, so that on discharging a volley we slay both together.

In the eruptive fevers and in cholera, where the fibrine of the blood is much diminished instead of increased, the employment of mercury to any extent is for this reason perilous. Fortunately, as generally given, in the shape of calomel, &c., it is seldom absorbed in such cases as these; and this is probably the reason why we so seldom hear of its ill effects, though these are commoner than the cures effected by its use.

Prop. 2.—*Mercury is of use in syphilis, and other diseases, by eliminating bad matter from the system.*—It is the deliberate opinion of a considerable majority of intelligent surgeons that there are certain cases of syphilis in which the proper administration of mercury causes a cure; and this cure is a more certain result of the use of mercury than of any other remedy; and further, that it is more effectual, inasmuch as it is seldom followed by secondary or ulterior symptoms.

In dividing under three chief heads the cases of syphilis which may occur in a constitution not previously under the influence of the poison, I am only expressing what I believe to be a common opinion at the present day, and which is very well set forth, as far as I am a judge, in the public lectures of Mr. Lee.

A fresh sore results from venereal infection. During four to five days the inoculated poison must work in the tissue about the surface of this sore, before it can be sufficiently elaborated to affect the general system through the blood. If, during this time, the sore sloughs, then the poison is destroyed and sloughed away before it is ripe. If we produce this effect by caustics, being sure that we are

in time, the same occurs. Then we need not, I think, administer mercury.

In a second class of cases the sore ulcerates. Its edges are rough and jagged. It has not sloughed away; but the poison having ripened, has passed along the absorbents to the glands in the groin. These swell and suppurate, and with the pus the poison is discharged; it does not further affect the system. In such a case, we need not, I think, administer mercury.

In the third case, the inflammation on the surface of the sore is of the adhesive kind. The edges are raised, the surface is somewhat cupped. The whole has a horny feel. There is little irritation; no sloughing. It is the chancre of Hunter and Carmichæl, more or less marked. We will suppose that the period of ripening has passed. The poison now infects the blood; it does not stop at the glands or inflame them. It passes straight into the system at large, and a rash declares that the constitution is affected. When a chancre of this kind is destroyed by nitric acid, or some other caustic, then all may go well; but when it has had time to mature, then, I think, we *should* administer mercury. We must introduce the only medicine of which we are thoroughly convinced that it possesses the power of efficiently striving with the enemy who by subtle means has now effected an entrance with our stronghold.

Syphilis, with the eruption, and ulcerations, and necroses, and the cachexy, that result from its working, is obviously a poison which itself decomposes and impoverishes the blood; and it seems to me not unreasonable to suppose that mercury, in its destructive action, seizes first on those parts of the blood which are most liable to putrefaction; that it grapples thus immediately with the fermenting and multiplying virus of syphilis, decomposes it, as well as those materials of the blood on which it has commenced to feed, and eliminates both these and itself together by the glandular outlets of the frame. To cure the corrosion of the vital parts, the mercury corrodes somewhat further and deeper, and sweeps all away. Its use may be compared to the wise plan of blowing up a number of houses to save a city on fire.

To be of any good the mercury must be given while the syphilis is comparatively recent. In the later forms of the disease, called secondary and tertiary, the mischief is already done; the blood is depraved. and a new phase of morbid action has taken the place of the first. Here, iodide of potassium is the remedy, and mercury, if ever given, should be given most cautiously, or in cases where its use was culpably omitted at the first.

From what I have already said, it will be seen that I do not consider it of much importance what plan of administering mercury in syphilis is followed, so long as any plan is carried out effectually. The practice of inunction is very efficacious, but is now unfashionable, uncleanly. The internal use of calomel, &c., is more perilous, but it may be best carried out by giving doses of frequent intervals. The fumigating plan may astonish us by producing a most notable effect just when we least expected it. Mercury should not be given

to produce much salivation. If the mouth is sore only, we know that the system has as much of the murcury as it can hold.

In such cases of syphilis as are common among soldiers and the *habitues* of the out-patient rooms of our London hospitals, we may often pause before we determine to administer mercury. The true chancre, which calls for it, is comparatively rare among those who have been often attacked; and when the constitution has long been accustomed to the syphilitic poison at various stages, and is liable at any time to receive a new infection which shall render our care nugatory, it is better perhaps to abstain from adding to the existing cachexy by so potent a depressing cause as murcury, and to rely most on other more gentle evacuants, on external treatment, and hygienic measures of a simple kind. In such cases as require the iodide of potassium, this may be given with less apprehension. The secondary and tertiary disorders, in which mercury often does little or no good, are in many points to be compared to scrofula, where also, except in small doses, this remedy is contra-indicated, whereas in both classes of cases the preparations of iodine are used with admirable effect.

In other diseases besides syphilis, it is very possible that a morbid poison may be occasionally got rid of in the same manner as I have supposed to be the case here. In ithic, gouty, chronic rheumatic, and dyspeptic disorders, a mercurial cathartic may sometimes eliminate along with itself the decomposed materies morbi. This is the action of mercury to which the name of "alterative" is commonly given.

Prop. 3.—*Mercury is of use in some diseases by increasing the natural secretions.*—This medicine increases all the secretions of the body. With regard to the three great glandular outlets, it affects the bowels most, the skin next, the kidneys least. But in most cases where any of these secretions are repressed or diminished, or where general elimination is advisable, mercury may be given with greater or less advantage. It is in common use as a cathartic, but it lowers the system, and should be employed warily. It is of great utility in hepatic dropsy, but generally does harm in granular disease of the kidney.

Of all organs in the body, mercury is most attracted by the liver. It is most difficult to produce salivation in cases of suppuration of that organ. In an instance of chronic poisoning by mercurial fumes, where the individual died twelve months after removal from the source of those fumes, mercury was found in the liver, but in no other organ or part of the body. Mercury increases the secretion of healty bile. This is not only a matter of vulgar observation and belief, but has been scientifically demonstrated by Buchheim and others. The bile I believe to be *the tonic of health!* the material which performs the same function in the sound system as that which is discharged by bitter medicines in disease. Mercury is a general eliminative; it is also a *catalytic* blood medicine. There are two ways in which it may act in controlling disease. There is probably yet a third way, to which I would call special attention here. Mer-

cury, in small doses, is used with more or less effect in all the diseases which are controlled by quinine; and I can think of no explanation more calculated to account for this than the supposition that the mercury is of use by causing an increased secretion of bile, part of which, required in the blood, and not destined for execretion, is reabsorbed into the blood, as shown by Liebig, and used in the system. In intermittent diseases, in remittent and billious fevers, in many cases of debility, in chronic gout, rheumatism, scrofula, &c.—diseases where quinine is frequently of use, and where the function of the liver is at fault—mercury in small doses is often given with small effect. In such cases we must by no means combine it with opium. This combination may be suitable in some peculiar cases of local inflammation; but it often hinders the proper action of murcury, instead of promoting it, and checks the elimination which is attended with such advantage.

I must now conclude this brief sketch of the action and uses of mercury. Were we to believe all that has been said about this drug, we should welcome it as a cure for all the ills that afflict humanity, the veritable panacea of the old dreamers. Unfortunately we cannot do this. But it is an agent of wondrous properties, a remedy of vast and varied power; perhaps, altogether, the most useful in our Pharmacopœia. It is the very prince of that class of remedies, unfortunately too few, that are capable of entering the system, of grappling with a disease in the blood, and of coming off victorious in the struggle.

Putting aside for the moment its use in the phlegmasiæ and in chronic disease, were it only for its power in syphilis, it would be of the most value to us. The syphilitic poison is connected in some manner or other with about half the diseases of towns. Is it likely to die out? Fordyce, on being asked this question, replied with another—Are men becoming tired in the pursuit of pleasure? The great moral ulcer of our social system, in spite of all the efforts of philanthropists and legislators, is hardly likely to be healed as long as men continue in their present state of mind.

> "Audax omnia perpeti
> Gens humana ruit per vetitum nefas.

Moreover, it is said, and I think with a fair show of reason, that syphilis is even gaining upon us in London. Is it wise then to do what some would advise, to let the only valuable weapon with which we are armed against it drop through our fingers? The more we know of its real actions, of the mystic processes of its absorption in the system, and of the comparative physiological tendencies of the various forms in which it is administered, the better shall we be able to wield it with skill and effect. In a line of investigation and of patient experiment on disease and remedy lies our best and wisest course; and so long as we steadfastly pursue this widening path, so long at least we physicians can say, that at the bottom of our box of Pandora there lies a Hope which is not yet flown.—*London Lancet.*

PART THIRD.

BIBLIOGRAPHICAL NOTICES AND REVIEWS.

A Manual of Psychological Medicine: Containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of INSANITY. With an Appendix of Cases. By JNO. CHARLES BUCKNILL, M.D., Land. Licentiate of the Royal College of Physicians; Fellow of University College, London; Fellow of the Medico-Chirurgical Society; Medical Superintendent of the Devon County Lunatic Asylum, and Editor of the Asylum Journal of Mental Science. And by DANIEL H. TUKE, M.D., Licentiate of the Royal College of Physicians, London; Lecturer on Psychological Medicine at the York School of Medicine, and Visiting Medical Officer to the York Retreat. Philadelphia: Blanchard & Lea. 1858. (For sale by Riley & Co.)

The want of a systematic treatise on Insanity, adapted to the use of practitioners and students of medicine, has long been felt. Pritchard's treatise has hitherto afforded the desired information; but it is a quarter of a century old, and is now out of print.

Aware of the fact that no amount of reading can render it safe to dispense with clinical knowledge of mental disease, the aim of the Authors has been to supply a text-book which may serve as a guide to the acquisition of such knowledge, sufficiently elementary to be available, and sufficiently modern to answer the demands of the practitioner.

The work is divided into *ten* chapters.

Chap. I. Historical Sketches of Insanity among the Nations of Antiquity, mainly in regard to its extent.

Chap. II. Opinions of Ancient Medical Writers on the Treatment of the Insane.

Chap. III. Modern Civilization in its bearing upon Insanity.

Chap. IV. Amelioration of the Condition of the Insane in Modern times, especially in regard to mechanical restraints.

Chap. V. Of the *Definition* of Insanity and of Classification.

Chap. VI. Of the various forms of Mental Disease.

Chap. VII. The Statistics of Insanity.

Chap. VIII. Diagnosis of Insanity.

Chap. IX. Pathology of Insanity.

Chap. X. Treatment of Insanity.

The *Appendix* gives cases illustrated by portraits, and also cases illustrating treatment.

We scarcely know from which of the above chapters we should make extracts that might convey an idea of the work. Chapter V. proposes a definition of Insanity; and for a moment we will look a little into this.

Of Insanity, it is certainly, in the present state of our knowledge, impossible to give a definition. What Dr. Johnson said of any one who should attempt to define poetry, or of those who have attempted to define anger, love, etc., may very properly be applied to him who should attempt the definition of Insanity—namely, that such attempt will only show the narrowness of the definer. "How much more difficult then must the task be when we are required, in the compass of a paragraph, to define a disease which in turn assumes as many forms, not only as there are fundamental faculties liable to disease, but as many forms as these combined in endless variety can assume, and still further varied according as one or more of them may be exalted, depressed, or obliterated!" While all that may be said, therefore, in a few lines, or in a lengthy paragraph, or even in a chapter, by psychologists, in the way of definition must necessarily come short of conveying ideas not open to criticism, we may nevertheless draw something from those who have made efforts in this line that will be of service in appreciating mental alienation.

Lock says: "Madmen do not appear to have lost the faculty of reasoning, but having joined together some ideas very strangely, they mistake them for truths, and err as men do who argue from wrong principles."

Cullen says: "Insanity consists in a lesion of the intellectual faculties without coma and without pyrexia."

Combe: "It is a prolonged departure, and without an adequate external cause, from the state of feeling and modes of thinking usual to the individual in a state of health that is the true feature of disorders of the mind."

Lelut and *Spurzheim:* "Incapacity of distinguishing diseased functions; a lesion in the association of ideas; a disorder of the passions and will without the patient's consciousness of such disorder."

Connolly: "An impairment of one or more of the faculties of the mind, accompanied with or inducing a defect in the comparing of faculty."

Guislain: "It is a derangement of the mental faculties, morbid apyrexial and chronic, which deprives man of the power of thinking and acting freely as regards his happiness, preservation, and responsibilities.

Bucknill: "A condition of the mind, in which a false action of conception or judgment, a defective power of the will, or an uncontrollable violence of the emotions and instincts, have separately and conjointly been produced by disease."

"Mental health, observes a Continental writer, "consists in that state in which the will is free, and in which it can exercise its empire without any obstacle. Any condition different to this is a disease of the mind."

Abercrombie: "The peculiar character of insanity in all its modifications appears to be, that a certain impression has fixed itself upon the mind in such a manner as to exclude all others; or to exclude them from that influence which they ought to have on the mind in its estimate of the relation of things. This impression may be entirely visionary and unfounded; or it may be in itself true but distorted in the application which the unsound mind makes of it, and the consequences which are deduced from it. Thus a man of wealth fancies himself a beggar, and in danger of dying of hunger."

We have thus glanced at the efforts made to define Insanity; and while it seems very obvious that the difficulty has not been compassed by any one of those who have written out their opinions, yet when all the definitions are considered, the essential points of the disease are pretty well set forth. The difficulty of a definition is simply its impossibility.

No less troublesome than Definition has been a satisfactory *Classification.* The work before us passes in review the classifications of the ancient writers, beginning with Hippocrates, the Father of Medicine, who recognized three distinct conditions of the mind: *Mania, Melancholy,* and *Dementia.* Celsus had three kinds of Insanity: *Phrenitis, Sadness,* and a form which he divides into two genera. "For some err in having false images not in their whole mind, as Ajax and Oristes are represented in poetic fables; in others the whole mind (or judgment) is affected." The modern systems of classification are also noticed. We have the very ingenious and elaborate one of Arnold; that of Mason, Good, Pinels, Esquirols,

Guslains, Connalys, Pritchards, etc. These are so generally known that a statement of them becomes unnecessary. The work, after considering all the above systems, comes to the conclusion, that although not based on any certainly proved physiological ground, a classification something like the following is the most useful:

Disorders of the Mind, involving

I. The *Intellect*. II. The *Moral Sentiments*. III. The *Propensities*. Thus:

Class I. *Intellect.*

Order I. Idiocy, Imbecility.

Order II. Dementia, Monomania.

Class II. *Moral Sentiments.*

Order I. Moral Idiocy, Moral Imbecility, Melancholia Exaltation.

Class III. *Propensities.*

Order I. Mania, Homicidal Mania, Suicidal Mania, Kleptomania, Erotomania, Pyromania, Dipsomania.

There is a very interesting Section on the examples in Ancient History of persons who were insane, or who feigned insanity, including references made to the disease by medical and other writers. The feigned *madness* of Ulysses, immediately prior to the Trojan war, should be regarded as the earliest reference in antiquity to the existence of mental disease.

The instances of King David and Ajax—the former of whom feigned dementia with success, and the latter who was seized with madness because the arms of the dead Achilles were awarded to Ulysses, and who slaughtered sheep and oxen under the illusion that they were the sons of Atreus, who had favored his rival—are perhaps familiar to most of our readers. "*Plato*, in the *Phœdrus*, observes, the greatest blessings we have, spring from madness when granted by divine bounty. For the prophetess at Delphi and the priestesses at Dodona have, when mad, done many and noble services for Greece, both privately and publicly, but in their sober senses little or nothing." Again, in his Timæus, "Plato makes several other allusions to madness. Thus, after speaking of bodily disease, he goes on to say, in the above manner are the diseases of the body produced; but the diseases of the soul resulting from the habit of the body are as follows: We must admit that the disease of the soul is folly, or a privation of intellect; and that there are two kinds of folly, the one madness, the other ignorance. Whatever passion, therefore, a person experiences that induces either of them, must be

called a disease. Excessive pleasures and pains are, however, what we should deem the greatest diseases of the soul, for when a man is over elevated with joy, or unduly depressed with grief, and so hastens immoderately either to retain the one or fly from the other, he can neither perceive nor hear anything properly, but is agitated with fury, and very little capable of exercising the reasoning power."

Plato has also enunciated the modern doctrine concerning criminal responsibility, which some of our erratic phychologists claim as one of the improvements of modern times:

"And indeed, it may be asserted that all intemperance in any kind of pleasure, *and all disgraceful conduct is not properly blamed* as the consequence of voluntary guilt. *For no one is voluntarily* bad; but he who is depraved becomes so through a certain bad habit of body and an ill governed education. All the vicious are vicious, through two most involuntary causes, which we shall always ascribe rather to the planters than to the things planted; to the trainers rather than to the things trained." Again: "There are two kinds of madness; one arising from human diseases, the other from an inspired deviation from established custom."

We have thus given a sketch of what the work presents of the opinions entertained by ancient writers. We might extend this part of our notice much further, but our space will not allow us to do it at present.

Chap. III. discusses *the bearing of modern civilization* on *Insanity*. The general result of this inquiry is the conviction of the Authors, that, *other things being equal, civilization* does on the whole tend to render men more liable to mental disease.

Nothing is perhaps more difficult than the work of making out the proportion of the insane population, whether in regard to various countries, or to the same country at different periods of its population. Too often the basis for such calculations are the numbers of patients in lunatic asylums. Such a calculation, where lunatic asylums are even provided, makes the number vary from one in one thousand to one in thirty thousand, and therefore is fallacious. "The tendency," observes Dr. Farr, "in a class is expressed by the proportion that *become* insane." To get at this requires an uncommon amount of care. In France the number of insane has been estimated at 1 in every 795; in Norway, 1 in 551; in the Rhenish Provinces, 1 in 666; in England and Wales, 1 in 577; in Scotland, 1 in 390. The results of insane and idiots in Massachu-

setts, according to the census of 1854, show 1 insane person to every 427 of the population, and 1 idiot to every 1,034.

There is no evidence that goes to show that the use of the intellect when confined to a reasonable range, predisposes to insanity. Exercise of the brain within certain limits not only strengthed it, but conduces without doubt to the general health and good feeling of the organism. Highly civilized nations, we have no idea, owe their greater tendency to insanity simply to mental culture. Such habits are as normal to the American or European brain, as are the nomadic to the brains of the Syro-Arabian. Incident, however, to European civilization with its attendant knowledge and education, we have social conditions which offer prizes dependent solely upon intense intellectual competition, unparalleled in any former age, and of course, unknown among barbarious nations. As Plato has well remarked, it is excessive pleasures and pains that wear out the soul. Dr. Guslain has remarked that "the people of European civilization and North American civilization, are, as it were, in a state of continual intoxication—intoxication of the emotions—intoxication of personal dignity—intoxication arising from constantly renewed impressions. It is not thus with those who approach closely a state of nature—men who live far from what we call "the world." The characteristics of such nations are, less affection, uniformity of manners and habits, the unchangeable character of social institutions —wants much more limited—the being inured to privations, a life in accordance with the instincts, a savage life which enables them to support pain, to fortify themselves against suffering, to brave peril, and to contemplate death itself with courage and tranquility of mind."

Much of the insanity of highly civilized communities owes its origin, perhaps, not so much to the work or impulses to which the mind is subjected in adult life, as to the manner in which it is crippled when young by the popular systems of education. *Infant* schools; or what amounts to the same thing, the sending of children at a very early age to school, and subjecting them to the most rigid discipline, the offering of prizes for mental efforts, produce in many instances lesions that manifest themselves but slightly at the time, but which "crop out" in after life with the presence of exciting causes, that under other circumstances would have been powerless. Our disposition to make the most out of everything induces us to work the clay before it is properly tempered.

At the present time it is pretty well ascertained that insanity proceeding from *moral* causes predominate very much over that from physical causes. "Fear, grief, reverses of fortune, domestic trouble, pride, ambition, great successes of any kind, religious fanaticism, political commotions, may be set down as being much more prolific in the production of mental disturbances than lesions of structure."

"I am not one of those modern philosophers," says Dr. Rush, "who derive the vices of mankind from the influence of civilization; but I am safe in asserting that their number and malignity increase with the refinements of polished life. To prove this, we need only survey a scene too familiar to affect us; it is a bedlam, which injustice, avarice, pride, vanity, and ambition have filled with inhabitants."

Here in America we have humanity existing in two conditions very widely contrasted—the one a race often improperly called Anglo-Saxon, possessed of proclivities, tendencies, and instincts that force the intellect up to every thing of which it is capable, and not satisfied without a religion equally exacting on the morals—the other race which passes the time principally in the open air, engaged in hunting, fishing, and other pursuits requiring much physical and but little mental exertion. The savage but seldom sheds tears, knows little of the anxieties and sufferings connected with poverty, and never exhausts his brain by thinking. Here then it would seem that we ought to have, as well as any where, the elements for a comparison of the relative predisposition of the two races to insanity.

"After much inquiry," says Dr. Rush, "I have not been able to find a single instance of *fatuity* among the Indians, and but few instances of melancholly or madness." "Dr. Lillybridge, of Virginia, under a government appointment, paid special attention to the diseases of the American Indians, yet he neither heard nor saw a case of madness among them." Dr. Butler, who lived twenty-five years among the Cherokees, never witnessed a well marked case of insanity.

Equally favorable to the solution of the question before us are the circumstances connected with Egypt. As the Nile is ascended from the Mediterranean, the traveler passes first through a country inhabited by a race formerly the most scientific of any on the earth, a race which, if judged by the monuments it possesses, has never had an

equal. Cairo, the capital of Egypt, possesses a lunatic asylum. Proceeding from Cairo, where the civilization is at its hight, the proportion of lunatics, it is said, gradually diminishes. Dr. Moreau, of Paris, who traveled in Africa for the purpose of inquiring into the number of the insane, states that high up on the Nile, the disease seemed to run out. He did not meet with a single case in all Nubia. Several of his friends that visited Sennaar, Cordofan, and Abyssinnia, found only a few imbeciles. Cousin, in his excursions on the coast of Guinea, over an area of 2400 miles, only met with a single individual who was insane. It is further stated by Furnari that the number of insane among the natives of Algiers, and the Arabs of North Africa, is far below that of Europe.

In the South Sea Islands the disease seems to be rare. Capt. Wilkes, commander of the U. S. Exploring Expedition, says: "During the whole of my intercourse with the natives of the South Sea, I met with no deranged person." China, it is said, has a comparatively small number of insane. This is attributed to the peculiar character of the Chinese civilization, which has led to a stereotyped and unexciting life, and to the limited extent in which the inhabitants indulge in alcoholic liquors.

In coming to the conclusion that a high order of civilization favors insanity, the greater facilities which exist in civilized countries for obtaining a knowledge of the numbers of the insane should not be lost sight of. Making due allowance, however, for this, the conclusion is irresistible that insanity rises to its maximum development among the civilized nations of Europe and America. Favoring this conclusion also are the circumstances that children, and inferior animals are but slightly liable to insanity.

We have in the work before us a very valuable table illustrating the influence of *Occupation* on mental health. Thus, in every 10,000 lunatics in asylums it appears that we have 53 merchants, 43 lawyers, 42 physicians, 28 clergymen, 28 artists, 21 musicians, 17 tailors, 16 shoemakers, etc.

This table, the first of the kind constructed, may approximate pretty closely to the truth. Merchants, of those enumerated, seem to be in the largest proportion. Intensity of application, connected with sudden reverses of fortune, may explain their greater liability. Lawyers and physicians are nearly twice as liable as clergymen. Then again, artists much more liable than tailors and shoemakers. What is there in a physician's life that makes him more than a cler-

gyman liable to mental disease? The same question might be asked with reference to lawyers. Why the mere mechanic—a shoemaker, for example—should be less liable than artists is easily seen. The table would seem to make it appear that occupations predispose just in proportion to the required investment of intellect. But is there really less intellect required for the clergyman, than for lawyers or physicians?

Proportion of Recoveries.—The statistical tables go to show the proportion of recoveries calculated on the *admissions*. Dr. Thurnam says: "As regards the recoveries in asylums which have been established during any considerable period, say twenty years, a proportion of less than 40 per cent. of the admissions is under ordinary circumstances to be regarded as a low proportion, and one much exceeding 45 per cent. as a high proportion."

The proportion of recoveries in recent cases, cases admitted for the first time within three months after the first attack, is 73 per cent. First attack above three, and within nine months, 43 per cent.

As regards *Sex* in relation to recovery, it has been found that there is little if any difference between males and females.

Relapses.—At one time Esquirol and others concluded that out of 100 recoveries 10 relapsed. Later researches go to show that the liability to relapse after first recoveries cannot be estimated at less than 50 per cent, or one in every two cases discharged recovered.

Diagnosis of Insanity.—This is a very difficult subject. Perhaps no class of diseases are so various in their manifestations as insanity. "No diseases present such an infinite variety of light and shade belonging to their own nature, or to their intermixture with other maladies, or to the influence of temperament, of individual peculiarities of habit, or of social position. * * * The diagnosis of most all other diseases depends principally upon weighing the evidence afforded by weighing physical signs and symptoms, upon evidence addressed to the senses; but in mental disease it is for the most part dependent upon evidence which is cognizable by the intellect alone, and upon data which the senses furnish to us only at second hand. * * * The physician must not only be a physician but a meta physician, not indeed in the almost opprobrious sense of this term, but in that better sense which designates a lover of truth, seeking to ascertain not the essence of the mind or any other unattainable abstraction, but the *laws* of mind, which are as regular as any other

natural laws, and the knowledge of which offers to philosophy a wholesome and legitimate object of research."

While there is much in this chapter that we should be pleased to transfer to our pages, we must, for the present, be satisfied with the following in regard to the *Physiognomical* expression of the insane:

"Thus in *Melancholia* the facial expression is emotional; while in *mania* it is emotional and intellectual, and is marked by the characteristics of changeableness and inconsistency. In *Dementia*, on the other hand, all expression has disappeared, the vacant stare and the meaningless lineaments indicating the loss of thought and desire. It is only necessary in this connection briefly to advert to the great peculiarities observable in the face of general paralytics, the trembling lips, the drooping brows, the features expressive of a mixed state of imbecility and excitement, the eyes with pupils of unequal size, together afford to the experienced alienist unquestionable testimony of the existence of this most hopeless of maladies."

A System of Human Anatomy, General and Special. By E. Wilson. Author of the "Dissector's Manual;" "A Treatise on Diseases of the Skin," etc., etc. A New and Improved Edition, American, from an Enlarged London Edition. Edited by Wm. H. Gobretcht, M.D., Professor of Anatomy in the Philadelphia College of Medicine; Fellow of the College of Physicians, Philadelphia, etc., etc. With Three Hundred and Ninety-seven Illustrations on Wood. Philadelphia: Blanchard & Lea. 1858. (For Sale by Riley & Co.)

This is a *new* and very excellent edition of a work that has been received with very distinguished favor both at home and abroad. It contains additions, somewhat extensive, by the Author, while the American Editor has added an Introductory Chapter of a general character, containing such preliminary information as appeared necessary to him to facilitate the study of anatomy. The number of wood-cuts has also been largely increased by the addition of one hundred and thirty illustrations selected from various authorities.

An examination of the work shows that the utmost care has been

employed to render the text correct and verify all the references to the illustrations.

It is unnecessary to say a single word in commendation of this work. As a hand-book it has heretofore given satisfaction, and as a consequence attained to a more general use than any work of the kind in the country. The additions made to it, in the present edition, by the Author and American Editor, enhance its value.

PART FOURTH.

EDITORIAL AND MISCELLANEOUS.

"Please Exchange."—From time to time we have received journals purporting to be of a medical character, with the above caption on the cover. As a general rule we have complied with the request. Indeed, we may say that it has given us great pleasure to exchange our humble and feeble efforts, in what we have been taught to believe a righteous cause, for the labors of others. Who could resist a custom that has had so much to do in making people wiser and better? The thing, when thought about a little, turns out to be of no mean character. The ancient Greeks, who reached the highest point of culture, exchanged freely with their neighbors. The Romans, Persians and Egyptians, did the same; and while it may be predicated as a fact that the civilization of each of these nations of antiquity owes its success to the circumstance that this was but an expression of its instincts; or, in other words, that each civilization was in conformity to the national idiosyncracy, it is also equally certain that those nations that kept up an intercourse with each other, were not only the most prosperous in worldly matters, but the most wise and powerful.

Impressed, we might almost say intoxicated, with the value and importance of the measure under consideration, modern nations have amplified it and perfected it, until we now have interchanges with almost the whole globe. A few nations have been selfish, have imagined that nothing was to be gained from extraneous light, that they had within themselves all of the essentials of sociology. Latterly, however, these have yielded to the dominance of the feeling

in favor of the measure, and, as a consequence, the regard of it is about to be as broad as humanity itself.

We need not stop to discuss in detail the advantages that have accrued to mankind from an interchange of ideas. It is enough to know that the policy of the measure is axiomatic. Now, no measure, whether national or international, lasts any length of time unless founded on utility. This, therefore, lies at the foundation of all "exchanges."

We have made these remarks in order to say a word or two as it regards the disposition we make of requests to "exchange." We, of course, take up the new visitor and look through it to see from whence it comes, and what it advocates. If devoted to truth, to science, we place it upon our "exchange list;" if to the support and elaboration of a humbug, or some partial system, we throw it under the table for wrapping paper. Our feeling has been, simply, that such prints, however highly they may be regarded by those engaged in conducting them, *are of no use to us.*

These remarks have been called forth by a new journal that has just come to us for exchange—"*The American Homœopathic Review*, New York, October, 1858." We treated the new comer with becoming respect when it made its appearance, by reading its Introductory, and observing how it "defined its position."

In its Introductory we have the following: "Fully aware of the difference existing among Homœopathists, we are nevertheless certain that the doctrine of '*Similia similibus curantur*,' is a common ground upon which all can meet, and upon this principle the Review takes its stand."

Differences of opinion upon everything else may be tolerated, except in regard to this doctrine of *Similia similibus curantur.* This is the "common ground" upon which the fraternity can meet and sympathize with each other.

Now, it looks to us, that this bond of union called a "doctrine" in one place in the above quotation, and a "principle" in another, possesses nothing that is strong enough, either to hold men ordinarily endowed with intellect together, or that ought to serve to direct in the cure of disease. Generalities are dangerous things when made from the lights of science; and what must they be when emanating from the rickety movements of a mind, the delight of which was to dwell for a life-time in regions where fancy is substituted for observation, and sophistical reasoning for experiment?

As we have seen, we have had the assertion "like cures like," dubbed a principle. Truly "principles" must be at a discount when confounded with such nonsense. Once *a principle* signified "*a truth,*" admitted either without proof, or considered as having been before proved. Who has ever proved the assertion, "*Similia similibus curantur?*" Do the advocates even know what the word *prove* means? What we have seen of their attempts to prove their motto, amounts to the grossest ignorance of the system of reasoning. Because a recovery follows the administration of the millionth of a grain of calomel, or indeed of calomel in any quantity, or the administration of any other drug, it by no means proves that the result was due to the article administered. Calling the phrase "like cures like, a "*doctrine,*" is in better taste. This means nothing without a qualifying word, and leaves each at liberty to prefix any that he may think proper.

Again, what advantage to us, or to any one else, to exchange with a journal that advocates the doctrine of "*attenuation*" in the administration of drugs?—a doctrine in opposition to every well conducted experiment that ever was made, not less than to the plainest maxims of common sense. In food, in drinks, in poisons, and in medicines the effects are, other things being equal, in proportion to the quantity used. On an ounce of food daily, an adult would starve. The organism would not tolerate for any length of time such a violation of natural law. Arsenic, or any other of the articles usually called poisons, may be given in small quantities with impunity. A certain amount of quinine is required to interrupt the paroxysms of an intermittent. Now, in each one of these instances, the quantity is regulated by natural laws, and hence any system that ignores this fact, is simply not entitled to the time necessary to expose it.

In conclusion we may freely admit that there is room for differences of opinion on materia medica; but there is no room for the flagrant outrages of Homœopathy—a system that has nothing in it but distempered imagination.

Consulting with Homœopathists.

While we have up the subject of homœopathy we will embrace the occasion to notice a question that has lately been up for discussion—the propriety of holding consultations with those engaged in the practice of homœopathy. We are aware that there are various ways of assisting in the spread of humbuggery—that, really, there

is nothing so well calculated to give currency to a false worthless system of medicine as efforts to expose it; and, as a consequence, we have long ceased to breathe a single syllable in the presence of the people against any of the enterprises got up to swindle them. The attempts by medical men to shield them, has only had the effect of exposing more square inches of skin to the lash. Reasoning on medicine the people don't understand; and if the physician should tell them of the nonsensical or dangerous character of a new fraud that had just been got up, he would be looked upon as a persecutor. As a result of this state of things, every quack who makes his appearance, and every nostrum offered for sale, have to be *worn out* by the people, it matters not at what cost of health or life.

But notwithstanding the hopeless condition of the masses with reference to quack systems, it seems clear that medical men should so demean themselves as not to be responsible for the results. Taking this simple view of the subject, we can see no propriety in consulting with Homœopathists. What good can result from it? The Homœopathist, if sentimental in his opinions, would stick to them. And could a regular physician be capable of anything else? No compromises could take place. It would be just as easy for a regular physician to compromise with a Spiritualist as with a Homœopathist. While, therefore, the patient could be in no respect benefited by the junction—or even fusion, if it were possible—of the two systems, the profession could not fail to be injured. If a medical man in good standing in his profession should meet a Homœopathist in consultation, the people, who are always an attentive audience in such cases, would no doubt be pleased. They would say, "Well, that is a good doctor; he is sensible; he rises above the little insignificant prejudices of his fraternity." All this, of course, would sound very nicely in the ears of the physician, and he would go home apparently satisfied. But what would be the effect? The people would come also to other conclusions. They would conclude that the Homœopathist was a pretty good doctor, or the regular physician would not have met him as an equal; and that after all there is something in that kind of practice. Moreover, perhaps, one of the patrons of the regular physician in time becomes indisposed, and having heard of what has taken place, he sends for the Homœopathist, thinking he would rather at the commencement of his attack take sugar pills than calomel, and knowing, that, if the sugar pills fail, he can at last have them compounded with the calomel.

We have thus put a case not at all unlikely to occur; and it would be very well, if it was only true that the physician who degrades himself by consulting with a Homœopathist should be the only one of the profession affected. Such conduct, as before remarked, affects every member of the profession; and our opinion is that there is not only no excuse for consultation with Homœopathists, but that it is a reasonable cause for excommunication. In extenuation, it is sometimes said that the physician who submits to the condescension occasionally saves the patient's life. Supposing this be granted he, by the act, in all probability endangers the lives of hundreds of others.

The character of the people who employ Homœopathists.

It is not, as might be supposed, the ignorant alone of our population who are the subjects of this delusion. Such have generally enough of *instinct* about them to resist the absurdity. It is those who profess to be enlightened—to have education enough to judge between systems—that are the dupes. Persons of notoriety in literature, of character in the learned professions, and occupying important positions of State, have yielded with equal facility to the process of wool-pulling-over their eyes. With only capacity to appreciate the imperfections of the regular system, and dilate upon the abuses of a few of the articles of the materia medica, these notables have ignored all the advantages arising from the study of the elementary sciences of medicine and the combined experience of the most learned men of ancient and modern times, and passed with a reckless, giddy stampede over to the support of systems founded on nothing but imagination and avarice.

No kind of an education except that of a medical, seems to serve as a prophylactic against quackery. It is not very difficult to imagine that faults enough in the brain of Poets might be found to account for their erratic course. Aristotle regarded them all as having the pate partly cracked, and as being able but occasionally to get out anything with sense in it. But it is not so easy to explain how it happens, that individuals, having the advantages of early education, and possessing what are regarded as talents in their line, with common sense, and knowledge enough of human nature to work their way from humble positions to that of legislators or governors of States, should be led with the docility of lambs to the slaughter, by the most transparent mountebanks of the country. The drama of

life, however, is full of just such instances. Some of the leading States of the Union are at the present time governed by men who believe in Homœopathy, and who endorse it by giving it their patronage.

Such being the case, the conviction is forced upon us that nothing short of a medical education will enable an individual to appreciate medical science, or obtain for himself in medicine that which is most likely to benefit him.

What is the remedy for this almost universal imbecility, with reference to Medicine? More democracy, in allowing every one who thinks proper to tamper with human life? Or should our government do as other civilized governments have done, assume at once the true ground, by making all men minors with regard to their maladies, and provide them with the assistance dictated by science? We intimated that civilized people have done this. They have, everywhere, except in America. Some of the half civilized have also enacted laws that tend to the same result. In Chili, for example, no one is allowed to practice medicine until he has submitted to an examination on all the departments. Such a law in Ohio would, to say the least of it, elevate us to the level of the demi-civilized in other portions of the globe.

We are aware that many will say that the measure we have indicated has been already tested in several of the States. This is simply a mistake. An efficient law on the regulation of the practice of medicine has never been enacted in America. We have had laws, but they have done no good. We want a law recognizing the fact that all men are naturally imbecile in medical matters, and, that they need to be provided for as a parent provides for the child—that left to themselves they go into the fire.

Synopsis of Remarks made by Prof. Dawson at the opening of the present Session of Starling Medical College.

Young Gentlemen: It gives me pleasure, on behalf of the Faculty, to welcome you to the halls of Starling Medical College at its present session. You come as pupils to get the knowledge necessary for the duties of an arduous responsible profession. And I may say to you in advance, that you will find your teachers of

the several departments that make up the course, always ready and willing to serve you to the utmost of their ability. They will prepare for you daily the scientific material that it is necessary you should absorb and assimilate as a foundation for the work before you. But do you appreciate the new relation in which you have placed yourselves? Are you aware that for a time you have mortgaged yourselves, head and heels, eyes and ears, to your teachers—that they have the sole right to your time, and to the use of all the avenues to your understanding? Such really ought to be the case; and it is only necessary that you should heartily recognize something of the kind, in order that, at the close of our interview, we may have the best possible results. You ask, what is Medicine? It may be replied, that it is neither an art nor a science; but art and science combined. You ask about the extent of it; it may again be replied that there is scarcely an art or science, but what either enters into the elementary composition of Medicine, or that does not contribute to it in some way or other. A medical man is not merely a physician, he is a physicist, a naturalist—he is not merely a mechanic, he is also an artist. The administration of a dose of rhubarb, or the adjustment of a fractured bone, is often properly performed by the novice. No one, however, but the medical man can give the *reasons* for his practice. Why are all the natural sciences necessary to a medical education? Simply, because man is in some way or other related to them all. He is the subject or object of them all. In the Social state, he is creator and destroyer. In Nature he is the merest creature.

Our *course*, however, is not intended to be commensurate with the limits indicated as belonging to medical science. We have for the present to content ourselves with a few of the essentials—a little of the ground-work, divided up into departments. We have Anatomy, Chemistry, Materia-Medica and Therapeutics, Surgery, Obstetrics, and Practical Medicine. Human Anatomy is but a very insignificant part, you will observe, of Zoology. Chemistry, that explains the action of atom upon atom, and all the circumstances by which that action is affected, is the mere commencement of a knowledge of inorganic matter. Materia-Medica instructs you in very little that is known of the kingdoms possessing healing properties. Surgery only attempts to make you acquainted with the injuries sustained by the human body, and the modes by which these are most likely to be repaired. The surgeon has no time to speak of the general subject

of the injuries of organized matter and Nature's method of repair. The obstetrician has to content himself with an explanation of human parturition, its accidents, etc. He has no time for the great subject of *Conjugation* as it occurs among the lower plants and animals, and the variations that obtain as we rise in the scale of the two kingdoms. Practical Medicine has of necessity to be confined to a few plain precepts on the habitudes and cure of disease; and like enough these will not fit more than one case in fifty which the physician in after-life is called upon to treat.

Such, young gentlemen, is a synopsis of what we are compelled to present to you as an apology for Medical Science. You say it looks to be comparatively meagre. We agree with you. But it is the mostwe can do until "the length of our days are increased."

Permit us for a moment to anticipate some of the popular objections to the inquiry in which you are about to engage—objections for aught we know some of you may have imbibed. A general one is this: "*Medicine is uncertain.*" So it is; and so is everything else with which mankind has anything to do. We are absolutely certain of nothing in this world except the works of the Creator. You know the doctrines of the ancient philosophers on this subject. The modern philosophers have not improved upon them, except in verbiage.

The trouble has always been in the methods of inquiry. With earlier thinkers the *Rational* System predominated. This culminated with Aristotle, the largest head of antiquity; and the influence of this man was so great that his method obtained currency for twenty centuries after his death. Aristotle erred in making the machinery of the Syllogism the test of truth, rather than the material which entered into the Major proposition. The Rational System of the ancients is the same as that now used in Germany in getting out new theories on psychology, and new systems of medicine. To this system, indeed, are we indebted for all the nonsensical trash with which medicine and literature have been inundated from Hippocrates to the present day. You inquire, how has all this happened? Because, reasoning is a process understood by but very few, and by those who do understand it, it is easily corrupted. The fault of Aristotle is the prevailing fault of the present day. The process really requires that we begin with axioms, in order to have axioms in the *conclusion.*

Those who have observed the tendency of things at the present day will, however, notice that we are drifting away from the *Rational System*—the method that has been productive of so little truth and so much speculation. Reasoning as a means of getting at Nature's laws is now at a large discount. A new era, that has had quite a number of Johns the Baptist, has dawned upon us. Its distinguishing characteristic is that it credits in scientific inquiry nothing but the results of the senses, *phenomena*. A work some years since (Bartlett's Philosophy of Medicine,) made its appearance in our country, proposing to ignore everything except *facts events*, and *phenomena* in medical investigations. This author, although little heeded at the time, made a great stride from the land of cob-houses. A writer of much more calibre, though not more astute as a thinker Compte, the French philosopher, in a very able work entitled Positive Philosophy, eschews everything in scientific inquiry except the knowledge obtained by the senses. Nothing according to him is entitled to credit without it has passed under the review of these sentinels and been endorsed. Phenomena, are his material of science. The most reliable medical men all over the world are now imbued with the same feeling. They are every day engaged in fanning from medicine its chaff—in reducing its component parts to the things, and those alone brought to it by *observation*, and *verified by experiment*.

Such a method you would suppose ought to be productive of certainty. It would seem so. The certainty, however, is relative. The method implies *accuracy* in the senses. Without accuracy here the phenomena must be open to doubts. Now it turns out that the senses have a little of the trouble about them of the reasoning faculty. The latter has its *sophisms*, the former their *illusions*. No one can see correctly until his eyes are disciplined, and no one can hear rightly until his ears are educated. The incapacity of the senses is at the foundation of many of the descrepancies of science. We have no time to elaborate here. But we have said enough to hint to you the general imperfection of methods, and consequently the imperfection of results.

Absolute certainty being simply an impossibility in any science, we all have to content ourselves with *probabilities*. And it may with great propriety be predictaed that these rise as high in Medicine as in any of the learned professions. There is, therefore, no reason why our calling should be singled out for reproach.

A thought or two on other matters. Socrates was put to death for exposing the folly of the Athenians; and Diogenes died prematurely in trying to set his countrymen an example on economy and virtuous habits. Notwithstanding all this, we will venture to suggest, that if any of you are the subjects of bad habits, you should leave them off at once. It is not necessary that you should possess the self-denial of the Cynics, but it is necessary that the excesses of the flesh should be kept in abeyance to the function of intellection. The studies before you lead to duties, for the performance of which, the highest powers of the mind, and these stretched to their utmost extent, are required. Questions will present themselves for solution very different from what occurs in physical science in its more simple material forms. Phenomena mental and material arise, with relations complex and occult to be reasoned upon and resolved, not according to the laws which obtain in inorganic matter, either in molecules or masses, but in such a way as will apprehend and appreciate the influences exerted on inorganic matter by adding to it the principle of life.

Permit me, in conclusion, to allude to another matter. You are very singular young gentlemen, if you have not shared, with the rest of us, more or less of the inconveniences connected with a light purse. Those it happens, who aspire to become members of the medical profession, are seldom if ever the subjects of wealth—have to worry along in early life with difficulties and privations. This should discourage no one. Ninety per cent. of all the great men—men who have distinguished themselves in letters and figures, important discoveries, and useful inventions — have been of humble origin. Indeed, it seems necessary to greatness that all the trials and deprivations of life be actually experienced. No one ever reached the top of the Egyptian pyramid, Cheops, without having taken the first steps.

Belmont Medical Journal.—We take great pleasure in announcing the appearance of this new Journal, and cordially accede to its request, "Please Exchange." It is edited by Dr. Afflick, and published at Bridgeport, Ohio. The numbers we have received are filled with good practical matter, such, we should think, as would please its readers.

Medical and Surgical Reporter.—This is the present title of that which was formerly the New Jersey Medical and Surgical Reporter. Its Editorial conduct having recently been transferred to Philadelphia, had the omission of a part of its name. Its Editor, Dr. S. W. Butler, has been eminently successful as a medical journalist. Thus encouraged, he proposes to supply the profession with a weekly, into which he has merged his former monthly. We greatly desire the success of his undertaking. With the exception of the Boston Journal, it is the only weekly medical periodical in this country. London alone has two or three. Paris has several which appear two or three times a week, while most of the other leading cities of Europe have at least one weekly.

We know of no one better calculated to head the enterprise than Dr. Butler. His journal has been among the ablest, most spirited and enterprising in the country. H.

Gone to the Lowest Bidder—"National Medical College."—The following correspondence speaks for itself. As we suppress the name of the author, we will merely state that he is one of the most enterprising and successful practitioners within our knowledge. We know him well, and regard him as a *perfectly reliable man*. We forbear comment. H.

———, Ohio, October 27, 1858.

Dear Doctor: My brother, who has been reading medicine with me for the last two years, and whom I fully expected to have had at Starling Medical College this winter, has been furnished a *free ticket* to the course of lectures in the National Medical College, and started for Washington City last week.

Of course this intelligence is of no interest to you. But I deem it proper that I inform you why he is not at your school, as I had written you that he would be there.

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Truly yours.

Prof. Hamilton. ——— ———.

Thoughts on the Progress of the Races.

Messrs. Editors: We have in our country, young as it is, two distinct orders of Mind, the *Intellectual* and *Mechanical*. The Intellectual is seen in the broad and comprehensive views it takes of every thing with which it is surrounded. It is an invisible something that dwells among us, presiding over our movements and regulating all of our relations. In Physics, it indicates the proper method of research, the method followed by the best results; in Art, it shadows forth the types and forms most worthy of imitation and preservation; in Sociology, it adapts inssitutions to the nature of those who are to be affected by them.

It is not our intention to do any thing more in the present connection than to indicate, in a very summary way, something of the agency of this order of mind as it exhibits itself at the present time in our social system. Some one has said that there is not a single principle pertaining to the social state that is settled—that has been verified as being absolutely true. However much surprise this declaration may occasion to some, it is nevertheless not to be criticised. Every principle pertaining to our institutions has the broad seal of imperfection stamped upon it, and as a consequence is all the time undergoing change of form, such as we have in matter. Notwithstanding all this, where a race has existed for any length of time, institutions have grown up around it, *the leading elements of which are in conformity to its wants.* We might elaborate this by referring to certain races that have had a political existence as independent nations during the historic period. The Chinese have adopted those laws and customs that the genius of the race requires, and under which it reaches the greatest degree of social perfection of which it is capable. The Hindoos and ancient Egyptians did the same thing. The more modern nations, the Engiish, Spanish, French, and Russian, all possess in their civilization certain things that are common, yet each one has in its peculiar educational institutions, etc., something founded upon the nature of its people.

Nor has any variety of the Caucasian race—the only one of whose history any thing is certainly known—been long in reaching the status of its civilization. Rome occupied but about 1,200 years in its rise and fall; Greece not half this length of time; while most of the nations, considered as of modern origin, so far as the perfection of their laws and usages are concerned, are regarded as having

already attained the essentials of what is suited to them. They have not, perhaps, arrived at the perfect development of their institutions, but there is every reason to believe that each one of them is suited in the form of government it has adopted. England wanted a Monarchy, France something more, Russia an Autocracy, and America a Republic.

We have premised these remarks for the purpose of trying to set forth something that is practical in regard to certain races that have but little if any history. I allude to the Brown races, the American Indian and the Negro.

Of the Yellow and Brown races it may be remarked we know but little that is trustworthy. Of late years Chinese institutions have been slightly investigated; and the Hindoos have had their connections with the social state somewhat looked into. The same is true with reference to the Malays,—still the historian has, as yet, no material with reference to any noticed worthy of record. Of the Syro-Arabian stock more is known. They have been demonstrating their peculiarities for some 2,000 years, under circumstances that can, to some extent, be appreciated. For a short period the nation seemed to rise to a point where it took hold of science and cultivated it with some success. Religious institutions, too, that have commended themselves since to a large portion of mankind, originated with this nation. The taste of the people, however, has in the general, been for a pastoral, nomadic life, and the Patriarchal form of government. After occupying the halls of science for a time, after having been instrumental in giving to the world the science of Chemistry, and much connected with Mechanics, after having served as the instruments through which a system of religious and moral ethics was successfully brought to the attention of mankind, the nation relapsed back to its barbarous state and remains so until the present day.

Our American Indians differ from the Arabian stock in no very striking manner. The Aztecs and Toltecs have left relics sufficient to indicate that they cultivated some of the coarser arts. Of their civilization, their religion and laws, we know nothing. The present stock of "Red Men" among us have advanced to nothing in the arts, and to nothing higher than the rudest forms of idolatry in religion. Without any form of government except the Patriarchal, they have remained for two hundred years contiguous to an enlightened nation, but not adopting any of its improvements.

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The typical wooly-haired races, of which the African as he exists in his own country, is a good specimen, have not since the first that has been known of them, made any advance towards a civilization. They have never invented a reasoned theological system, nor discovered an alphabet, nor framed a gramatical language, or took the first step in science or art: they have scarcely comprehended what they have learned, or retained a civilization taught them by contact with more refined nations. Their form of government, when any at all obtains, is autocratic—the chief of a tribe having power over not only the rights but the lives of his subjects. War rises among Africans to the character of an institution. It has existed among kindred tribes since any thing has been known of the people, and is often carried on for the purpose of making slaves. Of the 110,000,000 in Africa, 80,000,000 are said to be in a state of slavery.

All that is known of humanity, justify, to a considerable extent, the idea that progress has certain limits in a race beyond which it cannot go. Let us for a moment look at this position. The Egyptians got no higher than their Pyramids. From their barbarous condition they passed through every form of political government, cultivated a number of sciences with success, and developed a high order of the Arts, before they culminated in the building of the Pyramids. Here seems to have been the point at which the civilization of this ancient people terminated.

The Greeks reached their climax in Poetry, Oratory, Music and Sculpture, before the Christian era. The intellect of the nation, after having attained to unexampled energy and cultivation, has become dwarfed, until it is now scarcely recognized as being of Caucasian origin.

The Romans were satisfied in letting others originate the means for the cultivation of science and the improvement of the arts. Their ambition consisted in making soldiers and heroes out of all the people, so as to increase the dominions of the empire. Figuring at the head of a "*Triumphal Procession*" was the acme of Roman ambition. When the ability ceased for keeping up these, national decay came next in order.

The Chinese, centuries since, elaborated a form of government and educational institutions, that remain about the same at the present day. The nation might well be said to be *in statu quo*. Chinese Arts, however, are in a state of decay. Articles exquisite in workmanship, are among the people, without the knowledge

as to how they were manufactured. India was once the seat of an advanced order of cultivation. The human mind may never have had the strength there as in other Caucasian countries. The nation, however, attained to great excellence in many things. But more than a century since the work of disintegration commenced, which rendered the country an easy prey to an intrusive nation.

From what we have said, Mr. Editor, I hope you will not conclude that we are opposed to the progress of the races of mankind. The points we wished to suggest are, that each of the races strongly characterized, has its own kind of social state or civilization, and that it cannot be the subject of any other. That this state is reached by the operation of instinct and reason combined, and that it has its limit, beyond which it seems it cannot go.

If these thoughts, rapidly, as you will discover, thrown together, are, in your estimation, worthy of a place in your Journal, you are at liberty to insert them. Q.

Columbus, October, 1858.

Vegetable Astringents as Collyria.—The *Lancet* gives a report of some of the practice at the North London Opthalmic Infirmary, under Mr. E. Hart, which favors the use of collyria made of the vegetable astringents. Mr. Hart advocates two general laws, by which he is guided in the choice of local applications. "1. That all kinds of collyria are objectionable which leave any sediments. 2. That vegetable solutions are to be preferred to mineral." The first excludes lead and zinc, which have frequently been objected to with justice, on account of their deposition of a permanent character on ulcerated surfaces. His preference for the vegetable collyria is founded upon a practical observation of the benefit derived in numbers of cases. He employs frequently, a collyrium of tannic acid with glycerin, a strong solution of which is very effective in the treatment of granular lids. In *asthenopia* and other forms of debilitated vision, he uses with advantage a solution of green tea.

But these remarks of Mr. Hart should not cause us to feel a prejudice against other mineral collyria, which have repeatedly been found of signal service, and which do not leave any sedimentary deposit.—*Med. Reporter.*

THE DIAGNOSIS OF PULMONARY CONSUMPTION AT ITS COMMENCEMENT.—Dr. Scott Alison read a paper recently on this subject before the Western Medical and Surgical Society. The importance of diagnosis at an early period was shown by reference to facts arranged under three heads—1st, the vast mortality in advanced stages; 2d, the great destruction of the lining structure almost invariably found when the disease has long existed, in a great proportion of cases excluding all reasonable hope of remedy; and 3d, the material benefit afforded in a very large proportion of cases easily diagnosticated and treated. The number of patients under the care of the author at the Hospital for Consumption at Brompton, who here formed the grounds for calculation, is nearly 2,000. The mortality in advanced cases has been very great, and very few have presented signs of permanent restoration to health; whilst the mortality in early cases has been comparatively trifling, even when long observed. About one-half of these latter cases have been greatly improved, and have presented satisfactory evidences of the disease being arrested. Numbers have returned to their employment, or applied themselves to less laborious and exposed occupations. Muscle and fat have greatly increased, cough has been removed, and the respiration has been deprived of much of its shortness. About three-fourths of these patients presented grave symptoms and the usual physical signs; while the remainder presented either well-marked physical signs without material symptoms, or very marked symptoms with physical signs rather beneath the average weight of evidence ordinarily deemed proof of phthisis. The author regards the results as due to the early period at which disease was diagnosticated, and not to any particular method of medical treatment. Early diagnosis would be secured by a complete inquiry into the history of each case, by regarding the entire series of symptoms, and by a complete physical examination instituted at once, the chest being freely exposed back and front. The present state of medical knowledge was such and so widely diffused, that it was not likely we should be able to find any new symptoms of the disease, one which had been carefully observed for ages; but it was not unlikely that we should increase our knowledge of the physical signs. In the particulars of sound, form, and motion, additions would probably be made; but it was with respect to sound that most advance would be effected. Simple observation by the present means of auscultation would probably suffice to do much, but it was not unlikely that improvements

in our instruments for auscultation would render assitance. Dr. Alison referred to certain sounds which he had frequently heard in phthisis at its commencement, and before dullness of percusion had manifested itself, or was materially pronounced. The sounds were an "arrowroot-powder" sound, very fine, and accompanying expiration; buzzing, humming, and kettle-boiling or kettle-singing sounds. He was as yet uncertain as to the mechanism of the kettle-singing sound, but was inclined to think the evidence pointed to slight pressure on the veins of the lung causing oscillations of the blood and vessels, such conditions as are produced in the neck by gentle pressure with a stethoscope or by tightened integument. This sound is continuous, and several of the patients who presented it had suffered from hæmoptysis. Crumpling sounds had been frequently heard. A great means of discovering phthisis was afforded in the differences in the character and amount of respiration; and he (Dr. Alison) believed that the instrument which he had made, which gave a stethoscope for each ear, and which he designated the Differential Stethoscope, would prove available in rendering very slight differences in respiration appreciable, which could scarcely be discovered by the ordinary stethoscope. The ordinary stethoscope necessitated removal of the instrument from one part to another, and a certain loss of time, though slight in itself, important when comparing two sensations nearly alike, was incurred. For the diagnosis of pulmonary consumption at its commencement, we should look for the signs of that disease at that period, and not for those of later periods. The acoustic properties of the lung with small points or spots of tubercle were, and must be, different from those of that lung which is so studded with tubercles, or so infiltrated with that material, that nearly all the lung tissue proper is pressed upon or obliterated, or when the lung is broken down and has little cohesion, and presents numerous cavities. (The Differential Stethoscope was exhibited to the Society.) In many examples of pulmonary consumption no dullness on percusion whatever is found; and not one of the recognized signs is present in all cases, or even at all times in the same case. We must be content with a certain amount of evidence, and that will not be the same in all cases, or in the same case at different times. Deviations from the natural configuration of the chest occurred in pulmonary consumption at an early period. These were made out by their history and by comparing one side with another. The author's Chest-Goniometer would serve in discovering the devi-

ably suffice to do much, but it was not unlikely that improvements

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ations from the natural angles and curves, and in measuring them. The measurement at one period might be compared with the measurement at another. (The instrument was exhibited.)

Specimens of tuberculated lung, both in the early and later stages of the disease, were exhibited; and they served to prove that the physical signs in the different conditions of lung must greatly vary, and that the lung dotted with solitary tubercles the size of mustard-seeds, would afford few if any of the ordinary signs, and chiefly produce deviations in quality from the natural respiratory sounds, and some such delicate new sounds as had been referred to. The author was not prepared to say that these delicate sounds would not be found in other morbid states besides phthisis, but the same limitation held in respect of all other sounds.

The examination of the sputum, and the discovery by means of the microscope of tubercle and lung tissue, were referred to.—*Lancet*, June 19, 1858.

Scarlet Fever.—The *Virginia Medical Journal* gives some interesting remarks by Trousseau, from which we gather the following concerning its treatment:

As it runs a fixed course, he thinks, when it exhibits no serious complication, the less we do, the better for the patient. The antiphlogistic is highly injurious. Mild laxatives are beneficial in moderating febrile action. When we have excessive heat of skin, vomiting or diarrhœa, delirium, coma, or convulsions, cold effusions are of great utility. "The patient being placed, naked, on the sacking, you pass a sponge, wetted in water of the proper temperature, very rapidly over the whole surface, and then, without drying the body return him to bed, and cover him up. An hour after, the skin is found less arid, its heat less mordant, while there is a diminution in the frequency of the pulse. The other nervous symptoms also abate." If they again appear, repeat the process, even several times a day and several days in succession. The eruption is found more vivid after the application. As internal remedies, use carbonate of ammonia, from 30 to 60 grains a day; musk, 3 to 6 grains.

In the great majority of cases of scarlatina maligna, he does nothing for the throat. The only one to which he attaches any importance is the careful application of hydrochloric acid. When angina, with diphtheritic complication, comes on, keep up the strength by quinine, food, and stimulants. Anasarca, when not ex-

tensive, he treats by "rest in bed, tepid drinks, and moderate diet." Bloody urine, by acid drinks, uva ursi, with spirits of turpentine, digitalis and gentle laxatives. Extensive anasarca, rapidly produced, and tendency to convulsions, by active purgatives, head erect and legs hanging down. Scarifications, or large blisters to the legs. For the convulsions, musk, with belladonna; and compression of the carotids he has found useful, especially compressing the carotid of the opposite side, when the convulsion is on one side only. When on both, compress alternately, or both, if respiration is not too much obstructed by it. It should be continued for fifteen or twenty minutes on each artery. When the acute symptoms have passed away, give gentle diuretics, as nitrate of potassa and digitalis—[is the latter a diuretic? Eds. M. & S. Rep.]—and iodide of potassium in large doses. The pleural and pericardial complications are to be treated by blistering and *puncture of pleura or pericardium*, and, if necessary, *iodine injections.—Med. Reporter.*

Cold Water in the Treatment of Cholera.—Dr. T. B. Pinckard contributes two papers in the May and July Nos. of the *N. O. Med. and Surg. Journal*, in which he asserts his claim to the 100,000 francs left by M. Brêant, of France, to be awarded to the person who discovered the cause of *cholera and its cure*. He divides this disease in regard to its treatment into three stages: premonitory or diarrhœal, true cholera, and collapse or death stage. He gives in the first and second stages, this prescription: ℞.—Hydrag. chlorid. mite ʒss; pulv. camphoræ, capsici. āā gr. xx; pulv. opii, pulv. zingib., quinine, āā gr. x.—M. Ft. in chart. No. x. One given "in a syrup of loaf sugar and brandy, washed down with brandy and water, etc." Sinapisms to the stomach, if nausea. In this stage give very little drink, as brandy and water, ginger-tea, etc. If the stomach is loaded, an emetic of salt, mustard and warm water, and then continue the powders after each dejection. To children ⅛ to ¼ of a powder. Especially in the second stage, does he regard the salt emetic as invaluable. In the third, or stage of collapse, he gives cold water *ad libitum*, and its curative effects seem wonderful. He considers that it acts by supplying the place of the serum that has been lost from the vessels; the exhalents being dry, absorb the water rapidly, and restore the circulation, which is being performed very imperfectly, on account of the blood not being in a sufficiently

fluid state. Its immediate effect was to produce free, warm perspiration, and bilious discharges from the bowels, and restore completely the circulation. Many cases are mentioned by Dr. P., where collapse had come on, but speedily recovered by the use of cold water.

He gives, at some length, his opinion as to the cause and prevention of cholera. He considers the *electric fluid* as the life of man, and when the earth is deprived of its proper quantity, epidemics prevail. His article is valuable so far as it relates to his experience in cholera and its treatment, but the theoretical portion of it must be classed with much that has preceded it, of the same kind, by various authors.—*Med. Reporter.*

Tobacco in Erysipelas.—Dr. John G. Stephenson, of Terre Haute, Indiana, desires to call the attention of the profession (*Western Lancet*, May, 1857), to the treatment of erysipelas which has proved so beneficial in his practice, that the use of it has become, with him, a matter of routine. "The treatment is simply the covering of the inflamed surface with wet tobacco leaves (such as are to be had in any cigar shop), which are permitted to remain until much nausea is produced." Dr. Stephenson, while he admits that the excessive and distressing nausea produced by the internal use of tobacco prevents its administration by the stomach, is willing to believe in its power and safety when cautiously applied to a cutaneous surface, as a remedy for local inflammation.

We must, however, be aware of the difficulty, not to say impossibility, of determining, after no matter how many trials, the extent of surface to be covered, and of absorption produced by this application of tobacco, so as to procure the desired amount of sedative effect and accompanying nausea. The difference between the internal and external use of tobacco is only one of degree; and in both instances there is uncertainty and risk of alarming, if not fatal, results. Hence the great caution always practiced in the administration of this plant as a therapeutic agent—a caution which is especially called for in cases of erysipelas in old subjects with broken-down constitutions and slight powers of reaction.

In one of the cases related by Dr. Stephenson, the patient was pregnant about five months. She soon got well under treatment.

This consisted in the use of calomel, followed by saline purgatives, Dover's powder, sulphate of cinchona, and the local use of tobacco. In another case of a person aged 17 years, slightly chlorotic, in which tincture of the chloride of iron internally and tincture of iodine externally failed to prevent the extension of the inflammation of the leg from above the ankle to above the knee, the application of the wet tobacco leaves soon produced extreme nausea and prostration, followed, after several other renewals of the same topical treatment, by a complete removal of the inflammation.

Stramonium in Convulsions.—Dr. R. H. Salter, of Boston, relates his experience in the use of stramonium both in puerperal and common convulsions. (*Boston Med. and Surg. Journal*, March, 1857.) In reference to the first of these, he passes in review some of the modes of treatment which are had recourse to. We omit this enumeration and his criticisms on the occasion, which will be noticed more appropriately in the Report on Obstetric Medicine, in a future number of this Journal.

Of the six cases of puerperal convulsions detailed by Dr. S., five were of females in their first labor; the subject of one was attacked in her fifth labor. In the first case, the convulsions occurred on the eleventh day after delivery, and they left behind them permanent partial paralysis of the right side of the body. Age, 26 years. Half an ounce of the tincture of stramonium was given at a single dose. Dilatation of the pupils ensued in forty minutes, and the convulsions ceased. In the second patient, age 20 years, the convulsions came on just as the head was passing the superior strait. She took half an ounce of tincture of stramonium, with tincture of ergot—quantity of the latter not stated. Convulsions returned but once afterwards, and a healthy living child was born. In the third case the labor was slow, and the convulsions assumed a tetanic character. Relief procured in the same way as in the preceding case. The fourth patient had slight uterine hemorrhage for a week before the coming on of labor. A very large blood-letting failed to abate the violence of the convulsions, which were arrested completely by the tincture of stramonium, in a dose of ten drachms, given as an enema; the patient being unable to swallow. She was

delivered of a small dead child. In the fifth case, that of the fifth labor, convulsions occurred eight or nine hours after labor had set in. The convulsions ceased, and the patient became tranquil in half an hour after the adminstration of the tincture of stramonium. The sixth case was that of an unmarried female, aged 19 years. The fits came on at the time the head was passing the superior strait; they ceased after the administration of half an ounce of the tincture of stramonium, with ergot—quantity of the latter not stated. Five hours after the birth of the child, pain and convulsions supervened, which were arrested by a dose of five drachms of the tincture of stramonium.

Dr. Salter, in concluding his history of these cases, which we have abbreviated, remarks, "that the common and hysterical forms of puerperal convulsions will tolerate, and, for the most part, do well, under almost any rational and judicious treatment. Still, in these forms, I consider the treatment with stramonium as far preferable. It is in the epileptic form, the most frightful and formidable of all puerperal convulsions, that the common treatment is most likely to fail; and if, perchance, it should not fail, it is replete with peril, not only immediate, to life, but also to the future health of the individual. It is in this form that the comparative value and power of stramonium to control spasmodic action is most strongly exhibited."

Dr. Salter, although an enemy to large bleeding, practiced on these occasions, admits that there are cases in which the inflammatory excitement is great and manifest, in which a moderate bleeding should be premised as a *preparatory* measure. Ergot and lupuline will also be found necessary adjuvants, and other articles which might be mentioned; but in no case is any one of them a remedy *per se* for convulsions.

Dr. Salter describes two cases, one a male, aged 17 years, the other a single female, aged 24 years, who had suffered from convulsions, and to both of whom he gave tincture of stramonium with success. In the first case, he directed the tincture to be taken in one-drachm doses every fifteen minutes, until four or five doses were taken. On a repetition of this course, the medicine was directed to be continued at intervals of four hours after the fourth dose, as above. The female had had convulsions. The boy had no more fits after the second day from beginning with the stramonium. The

female had had convulsions, simulating tetanus, for thirty-six hours. Dr. Salter ordered the use of the tincture of stramonium in half-ounce doses. If the first did not relieve the patient within half or three-quarters of an hour, the same quantity to be repeated. "In less than half an hour after the medicine was given the convulsive action ceased, and the woman became perfectly quiet, fell asleep, and did not awake until next morning, when she rose, feeling perfectly well, experiencing no inconvenience whatever from the disease or the medicine."

Dr. Salter makes an apposite, and, at the same time, a practical remark, in conclusion. It is that, in his belief, many of the cases reported as tetanus are only counterfeits of this disease.—*North Am. Medico-Chir. Review.*

Galvanism for Counteracting Pain in the Extraction of Teeth.—I wish to lay before this society some practical results of my experience in the use of galvanism, particularly for allaying pain in the extraction of teeth. During the past few weeks, several of the dentists of this city have brought persons to my office for me to apply electricity from some of my batteries, while they extracted the teeth, and in some instances have also requested me to attend, at a given hour, at their respective offices for the same purpose. The whole number of patients that I have applied it to for this purpose is about twenty-six; the number of teeth operated upon, sixty-four. The first was a most interesting case—Mrs. W., the wife of one of our distinguished lawyers, a noble-appearing, but nervous lady, attended by her mother, and brought to my office by Dr. Dillingham. This lady had fourteen teeth more or less decayed, and much denuded of their gum by the long ravages of tartar or morbid secretions in the buccal cavity; each tooth exquisitely sensitive, even to the touch of an instrument, and all of which she greatly desired to have removed at once, for given reasons. The first tooth attempted was extracted with gentleness and care, and the electrical current was very feeble. The electricity was felt, and she evidently suffered pain, although she expressed a sensible relief, judging from her past experience in having her teeth extracted. I increased the current very considerably, and the next tooth came out with astonishing success; no sort of pain was experienced.

She rather supposed the instrument had slipped off, and the tooth was yet in the jaw. This must have been the first successful operation in Boston. The remaining twelve were extracted with the same favorable result, invariably, The fangs of these teeth had that bloody appearance which indicates long inflammation of their periosteum and old ulcerations. I observed that as each tooth was about to be taken hold of, she was very particular to ascertain if the current of the battery was in actual contact and readiness. No prostration, nor even fatigue, followed the extraction of all these teeth, for they came out entire. So delighted was she with this process, that she offered to pay twice the fee asked, and her husband called a few days after to express his thanks for the great relief afforded to his wife. When catechised closely, to ascertain from her the precise sensation or suffering of the operation, she said she "*felt no sort of pain*, but quite a disagreeable sensation at the instant of grasping the tooth, yet no worse than it would have been to touch each tooth with the instrument in the ordinary way." She had taken ether on former occasions, but preferred this very decidedly. One young man, belonging to the Navy, said he was very sensitive and nervous, and wanted a tooth extracted without either pain or going to sleep. But he said, "*it did hurt him very badly;*" he also vividly described feeling the tremulous sensation of the galvanic current. He never had had a permanent tooth extracted before.

Another unsuccessful case was a very intelligent young gentleman, of noble frame and fine form, but of delicate health, apparently of German extraction. He wished to have two teeth extracted in this way, because his teeth were so firmly set that they usually broke in extracting, and he was professionally advised not to inhale ether. His first tooth was taken hold of, and the current applied, but it fractured after a very severe and protracted tug at it by the dentist, leaving the roots solid in the jaw. He appeared to suffer, as he said he did, most intensely. The electricity gave no kind of relief, except from "the moment of the disagreeable application of the instrument" until the moment of fracture, which, however, was some seconds of time, and there was no pain, as he said, but at that instant of course the current was cut off, and the pain was awake again in all its fury, as it is wont to be on the occasion of such accidents. He went away much distressed.

Another very interesting case was a young lady who had come

with her father some forty miles to get her teeth extracted by this process, as they had heard it was practiced in Boston. The first tooth, an upper molar, was taken out with perfect success; but after washing the mouth with water, and no little talk, the next was operated upon, as we supposed all right, when to our surprise she screamed and almost fainted, from the pain of this second molar tooth. At once it was discovered by her father that there had been no contact of the galvanic current. The pad had fallen, unobserved by us, from the back of her neck outside of her dress into the operating chair, before the operation commenced. As soon as she was sufficiently recovered, she submitted again to the trial, and three more teeth were taken out without any sort of pain or disagreeable electrical sensation. She said it seemed "more like taking wooden pegs out of her jaws than like pulling teeth." This appeared to all present a fair test case. She said she should never forget the different sensations between having teeth extracted with and without the galvanism.

Two other cases were not very successful, from causes I need not here mention. But in the great majority of all these cases, there was expressed a great relief from anything like pain and a general satisfaction with the result. I should judge that about one-third of all who have been operated upon in this way persist in saying that "*there was no sort of pain whatever,*" while others, perhaps as many more, affirm that there was no actual pain, but they felt a sensation, by no means agreeable, at the instant of applying the forceps. Others experienced also "a moderate degree of pain," but they say "by no means very bad, and quite bearable." More than twenty of these persons, when asked for a candid expression of their experience, said that this gave very decided relief in extracting teeth, and that they preferred to trust it again if ever needed. All of these persons had had teeth extracted before, and some of them had inhaled cloroform or ether on former occasions.

The box of teeth I place here on the table for examination, contains some 30 or 40 of those *actually extracted without pain by the aid of galvanism.* It is evident that such teeth ordinarily give great pain in extracting. The rationale I am not prepared to give. No known current or shock of electricity, or galvanism, however modified or applied, has been known to be instantaneously paralyzing, or benumbing to pain under ordinary circumstances, without being also disorganizing more or less, and hence dangerous. We make

use of no such current or shock. But a to-and-fro current from a Smee's Battery, with the strongest pole attached to the forceps; and contact made exactly at the instant that the instrument fastens upon the tooth, does succeed in taking away three-fourths of the awful pain experienced in having teeth extracted. To have uniformity of success, the electrical current must be gentle, and adjusted, as to intensity, for each case according to the experience of the operator; and this current must be insulated from the hand that holds the instrument, as well as from the lips and gums of the patient, so as to spend its exact quantity of force on the tooth only. It is certainly a nice operation to succeed, but I believe, when carefully and accurately performed, it will more generally succeed than in these cases I now report. If any one item in the process is not observed, the whole is a failure.—*Boston Med. and Surg. Journal.*

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Those who take opium and its ordinary preparations, cannot be ignorant of the fact, that its distressing and pernicious effects result from the operation of its deleterious principles, and that the tremors, languor, and lassitude with which its devotees are afflicted, and for which they repeat the dose to relieve, are sensations of its own creation. In such cases, this preparation will afford a gratifying substitute.

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